Smithsonian

April 1982

With this Komondor guard dog watching the flock, no predator gets its goat (p.64)

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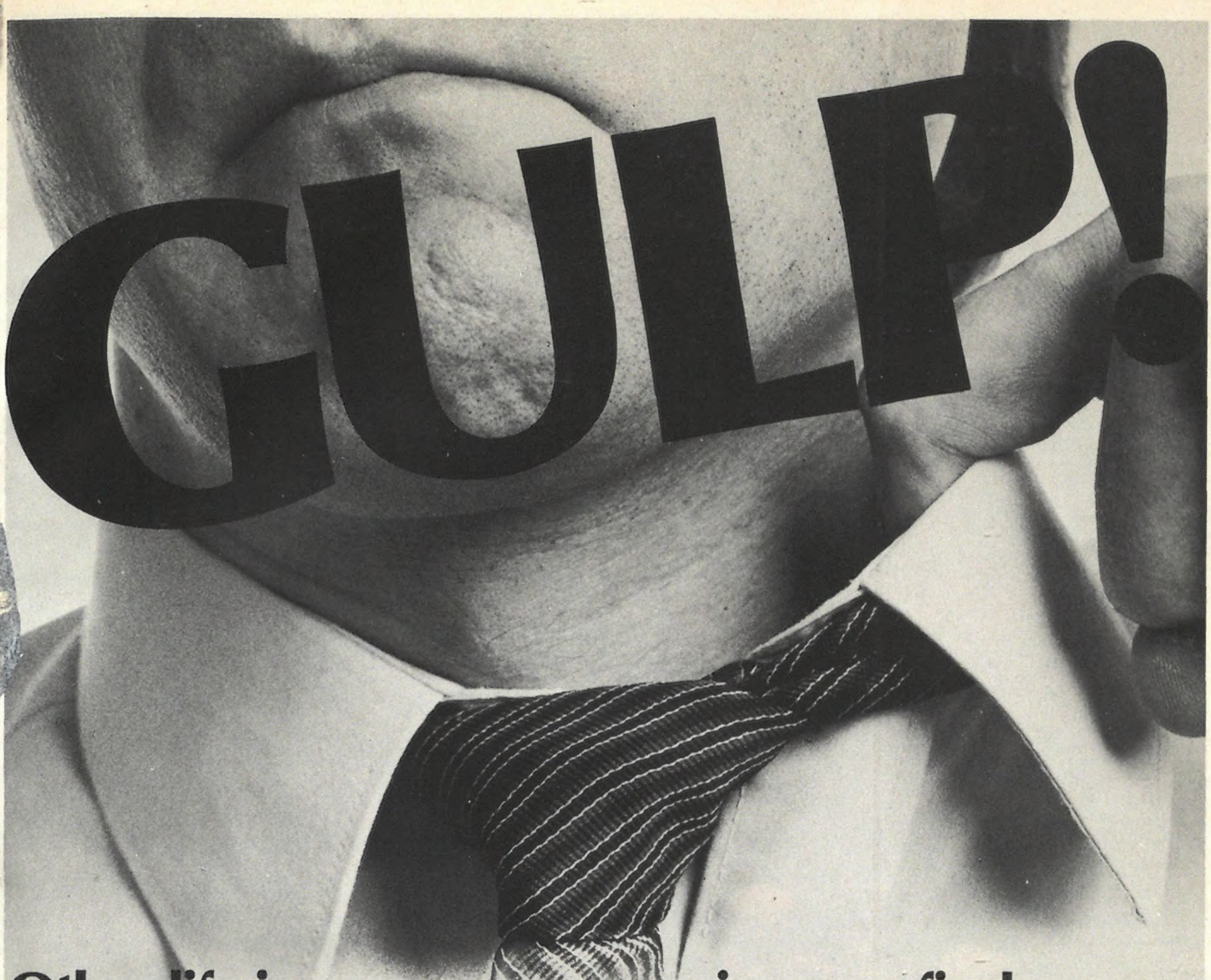

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April 1982

Smithsonian

Volume 13, Number 1

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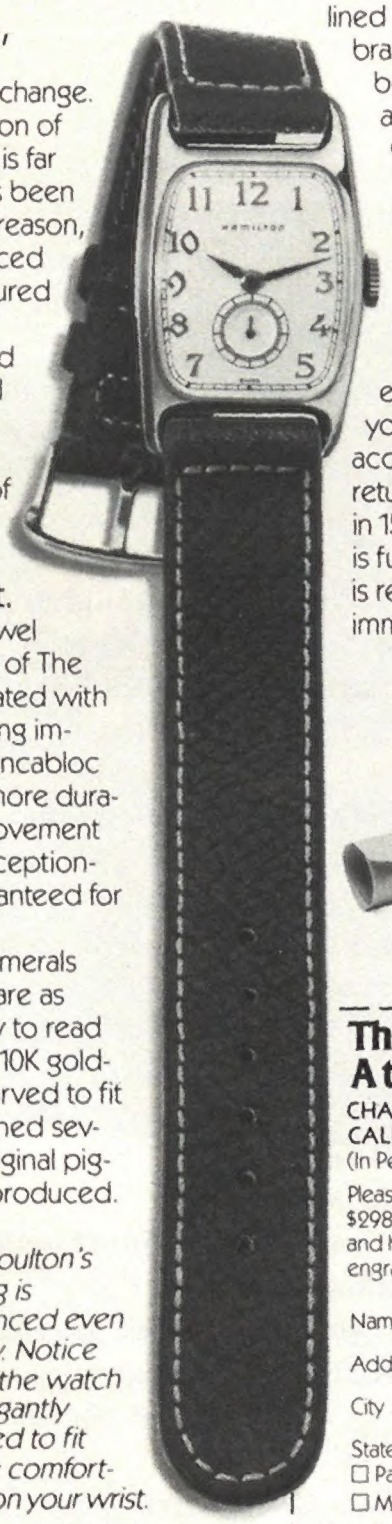

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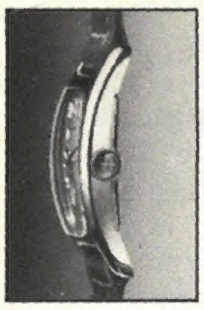

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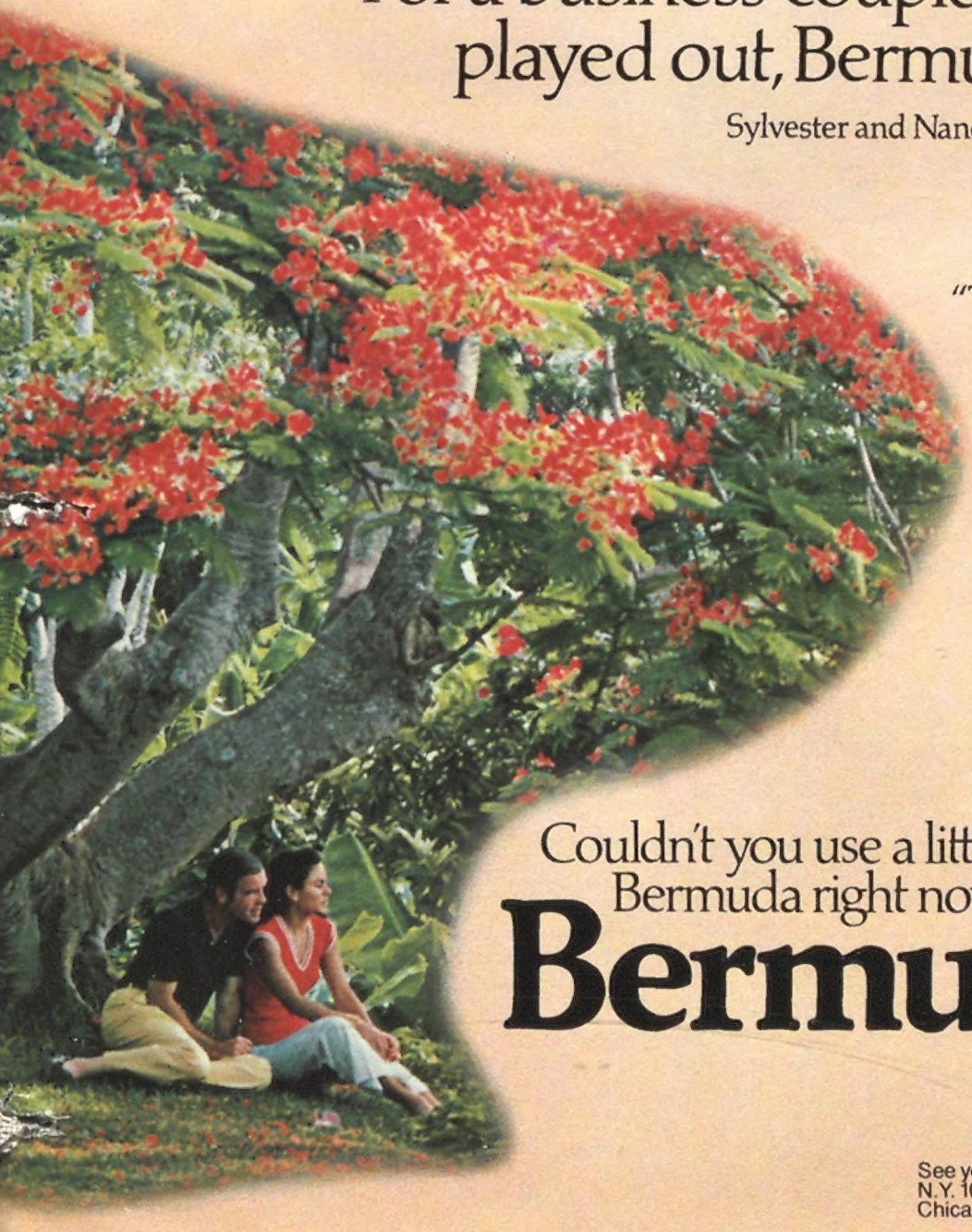

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Secretary Ripley's comments

The view from the castle

Birthdays, and the coming of springtime, remind us reassuringly that a sense of purpose underlies our lives as Americans

Walking down the Mall in the sun, the chill wind of a March day making it seem like February, one watches carefully so as to leave room for the silently padding joggers. They jog in all seasons, even in last December's and January's bitter cold. I wonder how many cases of chilblains afflict those red-colored bare legs pumping along so determinedly?

As in Beijing, people seem to be all over, exercising out of doors, any time, day or night. The grass is scored and dull, burned brown here and there, with muddy patches in which ring-billed gulls dig, hoping perhaps to find sandwich leavings or popcorn bits to top off their usual diet of early worms. They and the pigeons regularly assist the uniformed cleaning staffs, or "whitewings," as sweepers used to be called.

The winter is almost over now and with it the dreaded utility bills, frightening to open, a wrench to pay. With the winter has come the second round of our new Administration's drive to trim the costs of our vast government, represented in part by that huge array of buildings surrounding the Mall itself, although outside the perimeter of grass and our more gently scaled and architecturally diverse museum buildings. Thank goodness the Smithsonian's buildings *are* architecturally diverse. They do serve as a foil for the somewhat monotonous backdrop of government buildings.

January saw the centennial of the birth of Franklin Delano Roosevelt, and the exhibits on the Mall and beyond seemed appropriate in a time of recession, so evocative of the greater Depression years—reminding us of how Americans responded then to widespread accusations of loss of will, of faith and of courage. In the light of those dark days, it seems appropriate now to gather heart, to summon our convictions once again that America has a special talent for renewal and for survival.

Walking along the Mall is good for the spirit, at least for my spirit. The scale is so vast that mere humans, trudging into the wind or jogging in every which direction on the scarred grass or on the always-damp gravel, seem like ants, going somewhere.

With such a sense of purpose demonstrated, such a panorama of marvelously different buildings all about, I find the Mall reassuring. The Washington Monument, towering into a blue sky dotted with scudding cotton clouds, flags that encircle the base whipping straight outward, is not merely nakedly assertive; it becomes majestic and splendidly appropriate in this year, the 250th anniversary of the birth of our first President. General Washington came alive in this past year of the bicentennial of the Yorktown victory, and now lives again in his own 250th year. The recollection of his triumph over the doubts and fears of his time brings a new certainty. The remembrance of Washington's victory has a special ring, clear and true in our own troubled time.

To walk along the Mall in the sun, in the chill wind, is a thrill. It is a tonic. It revives the spirit, and reminds me that after all it is really grand to be an American in this year, and (dare I say it?) in every year.

S. Dillon Ripley

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Letters to the Editor

Huntington Library

Dear Sir: Michael Olmert's splendid article in your February issue is as warm and illuminating as that picture of the sunlit south facade of the art gallery, a place I have visited on every trip to the Los Angeles area. I never fail to stop at the family mausoleum on the grounds and pay my respects to the occupants for their foresight in leaving such a living glory.
George A. Wick
Sibley, Iowa

Dear Sir: When I read Mr. Olmert's article I was startled, because just 60 years ago this month my father, Henry Wortmann, guarded *Blue Boy* on its last trip, via rail, from New York to San Marino. His business was transporting art and manuscripts for clients such as the Metropolitan Museum, Duveen Brothers, the Rockefellers and Fricks. For the *Blue Boy* assignment there were two guards—one of whom had always to be awake and locked in the railway compartment with the painting. I've always hoped my dad's rightful place in art history could be known, and you've made it possible.
Alice Schwarz
Spearfish, South Dakota

Dear Sir: The statement "Indeed, most of the world's oil deposits originated from decaying masses of cycads or their relatives" does not square with current research into the origin of petroleum. Cycads, along with reeds and other forms of vegetation and methane gas undoubtedly made a major contribution to coal, peat and lignite deposits but little, if any, to oil. Most of the world's oil deposits originated in marine sediments, from the decomposition of micro-organisms such as marine algae, diatoms and foraminifera.
Walter W. Higgins
Consulting petroleum geologist
Houston

Twinings tea

Dear Sir: I read with interest and delight Jill Jonnes' article. However, a point she might have included is the breezy derivative of the Chinese word for tea, *ch'a*, used in England in the expression "a cup of cha." And the English still keep their teapots warm with an old-fashioned tea cosy, usually hand knitted. As an Englishwoman with these habits strongly formed, I carry on the tradition here in Florida.
Aileen Wolfenden
St. Petersburg Beach

Dear Sir: Your article slaked much of my thirst for knowledge about this delicious beverage. It left me unsated, however, on one aspect which has disturbed me for years. Why is it that Twinings products are packed in cans (wouldn't the British say "tins"?) which are so unhandy to open and from which it is so difficult to get a spoonful of tea leaves? If it is tradition dating back to 1706, it is time for a change. That would lessen the need to cry over spilt tea leaves.
Elmer E. White
Okemos, Missouri
Because tea readily absorbs other aromas and moisture, Twinings puts it in vacuum-packed tins, where it has a shelf life of two years. Ed.

Dear Sir: We were aghast that the author confused the term "citrus flavor" with citrus fruit. Bergamot, genus *Monarda*, is indeed the flavoring agent for our favorite brew, Earl Grey tea, but is a member of the mint family, with characteristic square stem. The fragrant leaves are dried to produce the essential oils.
Jane E. Murray
Camp Hill, Pennsylvania
Monarda *and* Citrus bergamia *are both called bergamot, but only the citrus is used to flavor Earl Grey tea.* Ed.

Lightsails

Dear Sir: Eric Drexler's article is a fascinating and inspiring look at the future of space travel, but seems to imply that

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Michael A. Scarpato
Philadelphia

George Washington

Dear Sir: I have collected Washington memorabilia for 25 years and my entire home, a 90-year-old Victorian, is dedicated to George Washington. It includes wall-size murals, tapestries, jewelry, a library and a life-size statue which I commissioned from sculptor George Edlund.
Joe Jenkins
Santa Clara, California

Dear Sir: Marcus Cunliffe failed to mention the Washington National Masonic Memorial, just across the Potomac from Washington, D.C., in Alexandria, Virginia. There, is a statue of Washington in knee breeches and buckled shoes.
Charles R. Rosenbaum
Springfield, Missouri

Coatis

Dear Sir: In 1953 I commanded a unit in the Canal Zone. My executive officer's young wife, Rita, with great excitement told me, at a cocktail party, about the "adorable little honey bear" (the local name for coatis) that came out of the jungle behind her house to accept her table scraps. I said she was making a grave mistake in getting chummy with a panhandler from the jungle. Sure enough, the honey bear soon was tipping over the trash can. One day we received a frantic call from Rita. Her honey bear, apparently emboldened by all the free lunches, had ripped the back-door screen, got into her neat and spotless kitchen, and proceeded to make a shambles of the place.

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coati had the run of the airline terminal building. It loved to lick fingers. While two ladies were chatting, waiting for their plane, the little rascal came up behind one and gently took her hand in its mouth. I'm told the lady set a high-jump record that still stands in Honduras.
Dan Still
Sykesville, Maryland

Dear Sir: Ethological articles of this kind add to a body of knowledge for the layman which is of immeasurable help to those of us who are in the business of explaining the behavior of such creatures to our constituents. The coati is one of the fascinating animals indigenous to the Sonoran Desert region and can be seen at the Arizona-Sonora Desert Museum west of Tucson. We invite your readers to visit the museum to observe not only the coatis, but also the hundreds of other indigenous animals we have on exhibition.
Christopher L. Helms
Tucson

Robert Benchley

Dear Sir: In the spring of 1945 I was discharged from the U.S. Navy and remember the wonderful movie short in which Mr. Benchley performed nearly all the roles about a sailor being given his separation pay. Unfortunately, most Americans under 25 are unfamiliar with his antics.
Joseph O. Balogh
Lake Oswego, Oregon

Dear Sir: The article was charming and certainly captured dear Robert Benchley's marvelous humor.

There is a story told by his son Nathaniel: before Robert died he had asked to be cremated and his ashes buried on Nantucket Island. Mrs. Benchley and her sons carefully packed the bronze urn into the car and took off. The urn was duly delivered to the undertaker—who upon opening it found it empty. The people in New York had neglected to put in Benchley's ashes. "You know, I can hear him laughing now," said Mrs. Benchley.
Cindy Seaman
Sea Girt, New Jersey

Phenomena

Dear Sir: I fear that your feeling better "immediately" after reading Mary Midgley's arguments to the effect that we are

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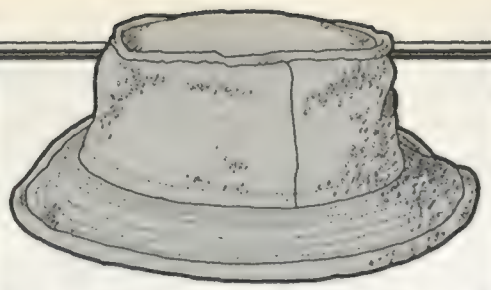

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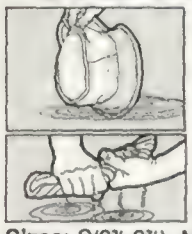

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more complicated than our theories give us credit for is both too rapid and too easy. For example, while Professor Midgley says it is all right to despise dollar-snatching cormorants, she has new esteem for the value of respecting our elders—who are those very cormorants.

She lists other things in human life besides individual freedom but erroneously treats them on a par with individual freedom. To be sure, there is affection in human life but affection presupposes individual freedom. Shared work and play without individual freedom is slavery. Homecoming without individual freedom is abduction. Celebration without individual freedom is a forced show. Laughter without it is a manic charade.

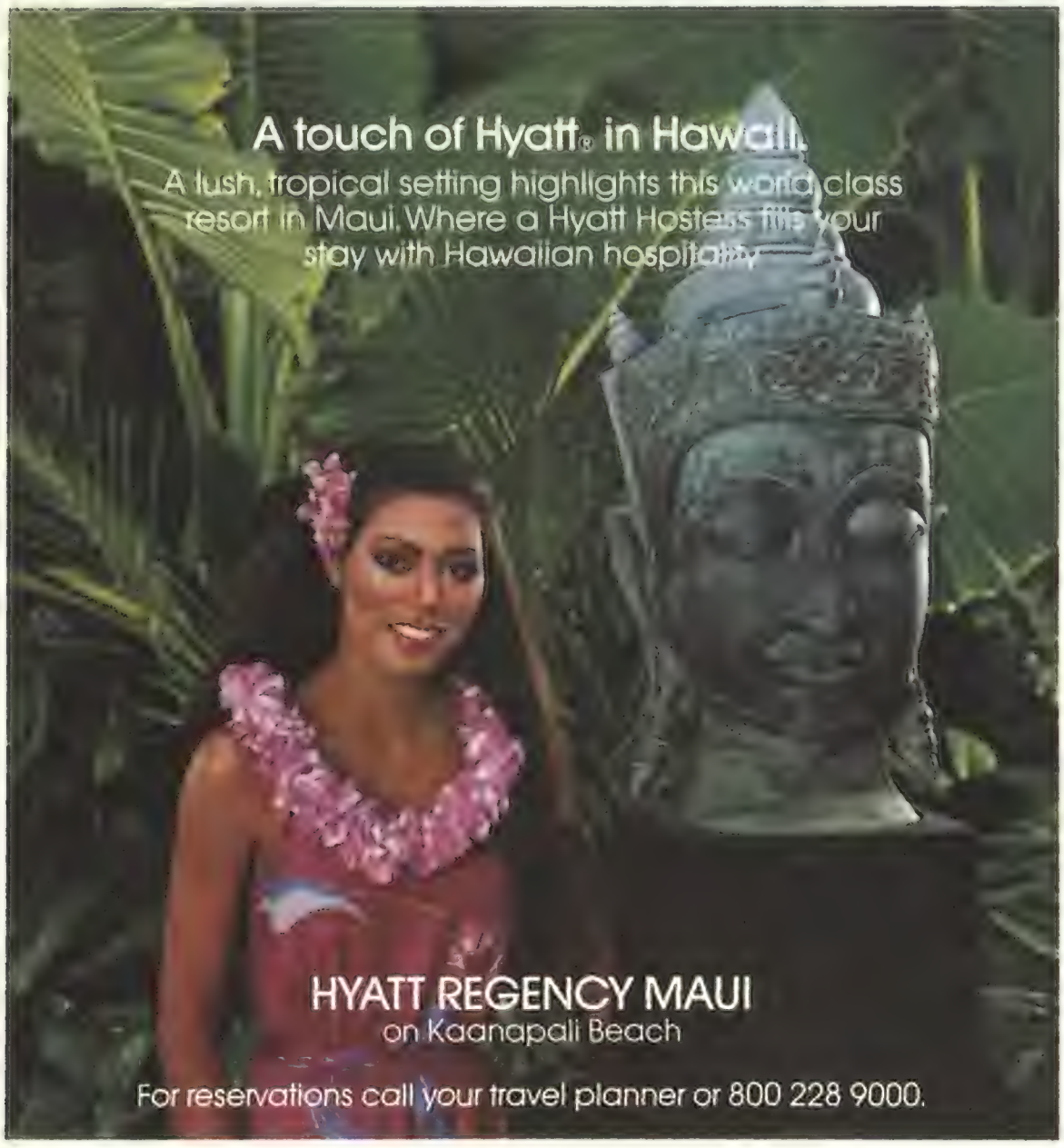
Against egoism and the pleasure principle, Professor Midgley argues that no one explanation will deal with our motives and she seems to give us a duality of explanations: "guilt and horror." We should not have our fellow men think and understand their motives; no, instead we should make them feel guilty and scared. In medieval Europe, this was a good program; in the age of more atomic weapons than it takes to destroy a thousand Earths, it is not worth comment. Everyone is already feeling guilty and horrified and our problem, even after reading Professor Midgley's essay, is: "What do we guilt-ridden and horrified folks do now?"
S. Milton Jones
Rochester, New York

Edward Curtis

Dear Sir: As a Native American I was insulted by your article on the SITES exhibit and Mr. Lyman's book. I totally agree with Mr. Curtis' articulation of events and environment. He presented most exactly the dignity and life-styles of our true ancestors, and most sincerely tried to capture the essence of Indian life in North America. No one has equaled his scope and efforts, or the rapport he attained with his subjects in capturing the last hopes of documenting their culture.
Gale Chapman
Boulder, Colorado

Mom to a word processor

Dear Sir: I hate to be the bearer of bad news, Ann Zwinger, but your word processing problems are only just beginning.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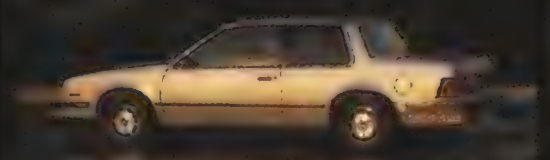

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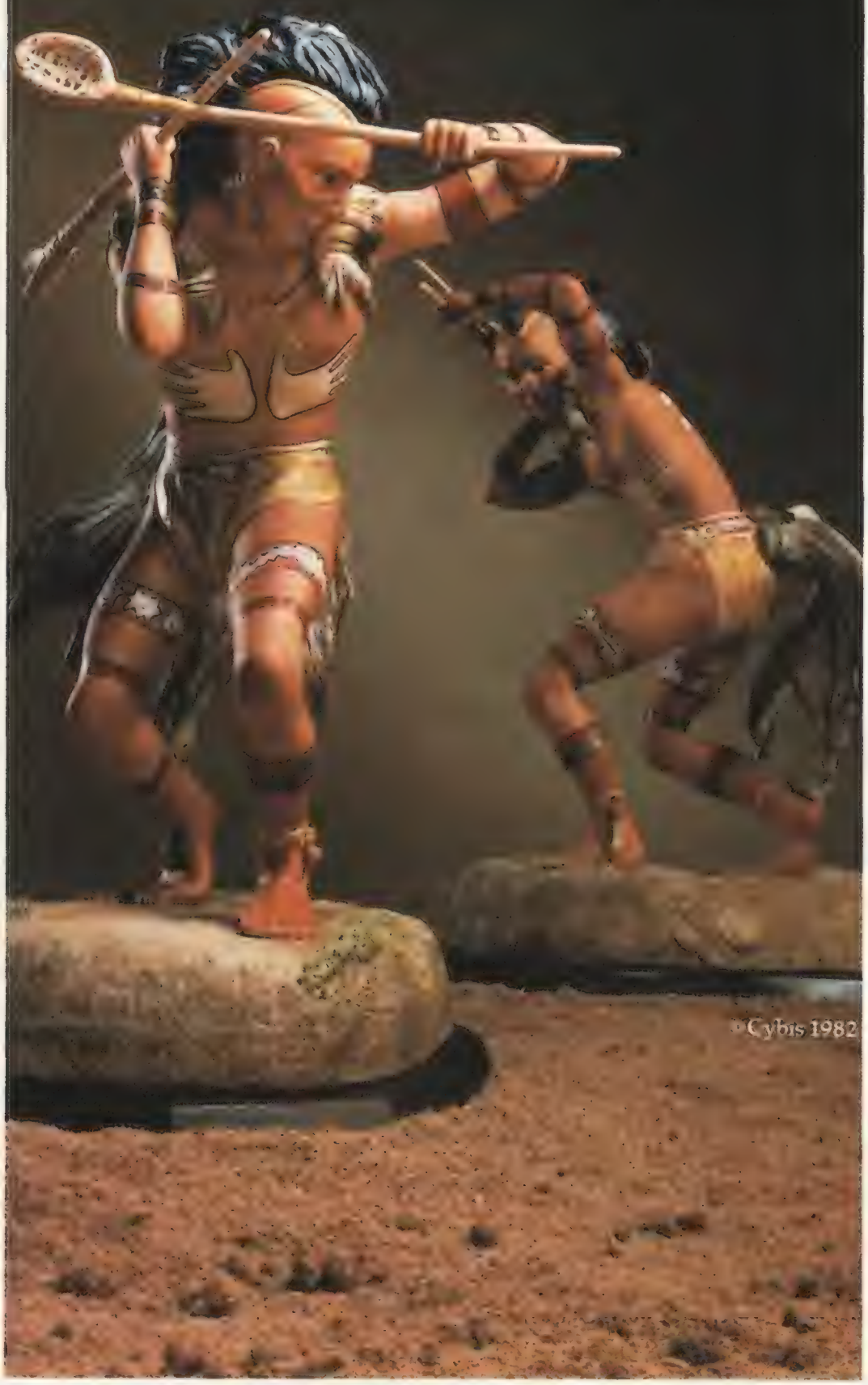

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Soon your maturing child will discover that there's more to life than moving paragraphs and give you a hard time. It will want a companion. So, you'll comply because, after all, it can threaten to steal your chapters once again.

The day your second word processor arrives is the day you'll have to face some hard, cold facts. You're not Number One any more. They'll send you messages like "Busy, please wait," and you'll wonder where you went wrong as a parent to deserve such disrespect.

So, enjoy your word processor's adolescence while you can. You'll look back on this time as the best years of your life together. However, there is something to look forward to. If your child and its companion really hit it off, there just might be a new word-processing baby on its way. And then you can do it all over again, Grandma!

Linda Hopkins, Proprietor
The Word Processing Center
Arleta, California

Dear Sir: When I very recently had the same experiences the processor was on a table in my dining room, and I had the inclination several times to set it a place at table when mealtimes came around.

Katherine Fontaine Heath
Riner, Virginia

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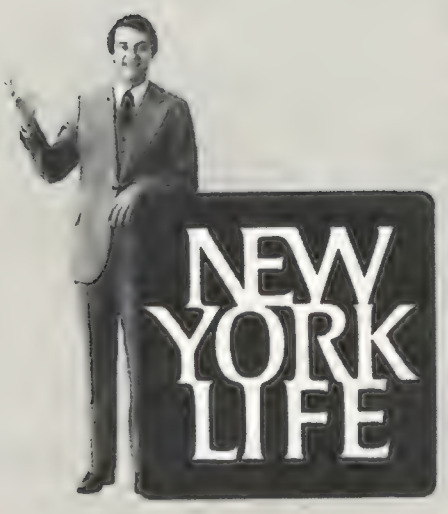

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Around the Mall and beyond

In the days of the square-riggers, sailors returning home from a long voyage would often complete their final tasks to the strains of a certain highly popular chantey. In verse after verse, the chantey-man frequently would list everything that was wrong aboard the ship: the captain was a hard driver, the food was as bad as the pay, the vessel leaked, the cargo stank. And the chorus, bellowed by the crew, was perfectly logical under the circumstances: "Leave her, Johnny, leave her!"

I have just left a square-rigger, and I have news for Johnny: stay with her, if you can. For my ship was the four-masted bark *Sea Cloud* (above), once the pride of cereal heiress Marjorie Merriweather Post. The vessel is beautiful; her voyage was a delight to her passengers, members of a Smithsonian tour; and leaving her the other day was a downer for all hands.

When built in Germany 51 years ago, *Sea Cloud* was the largest private sailing yacht in the world: 316 feet. Cruises aboard her were regal—no hint of the Depression was allowed. Guests' cabins were luxurious. The owner's suite was astonishing: "His" and "Hers" staterooms—rich paneling in one, satin in the other—marble baths with gold-plated fixtures.

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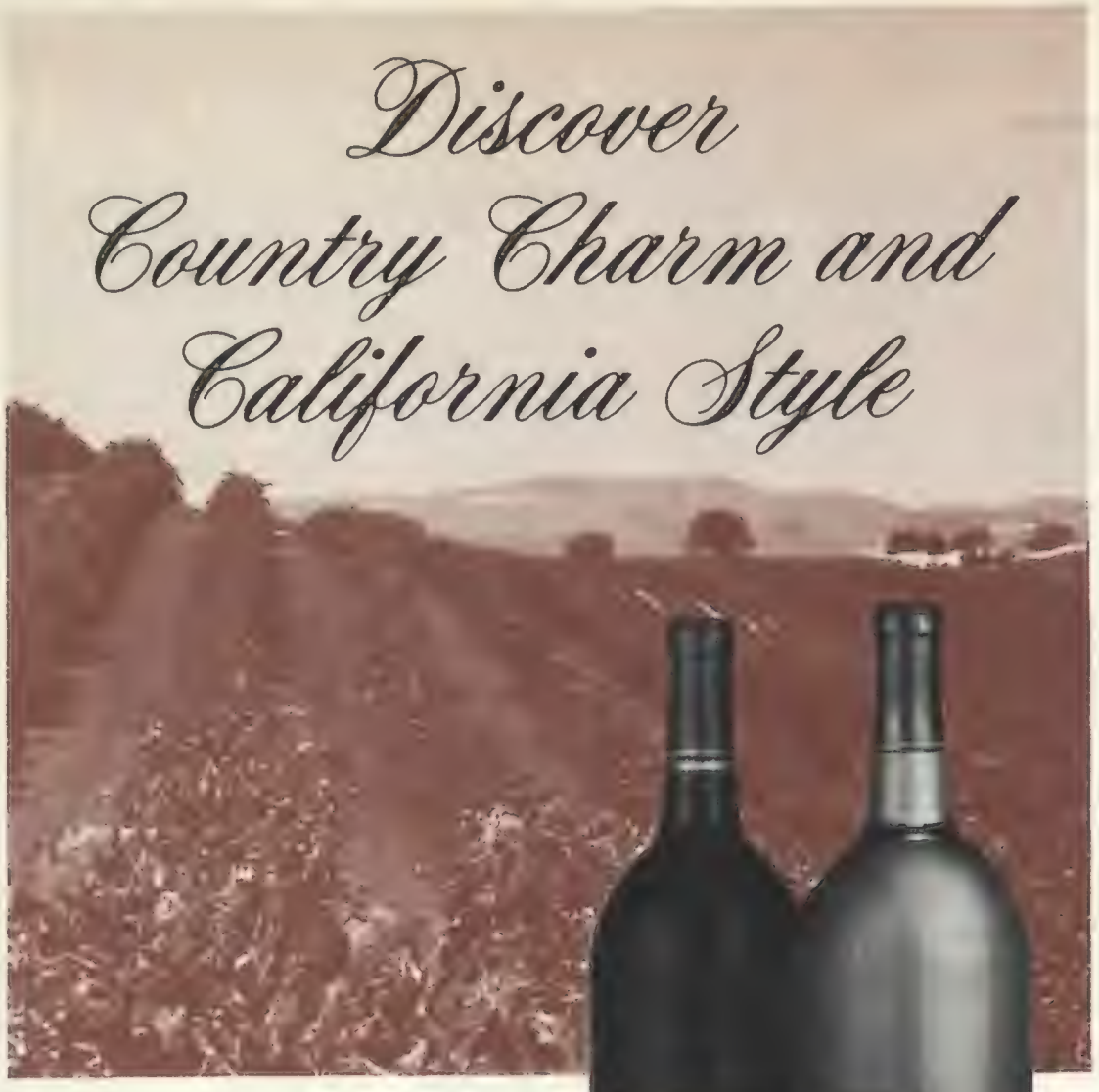

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A large crew provided personal service to the passengers as well as running the ship smartly. Marjorie's husbands came and went, but her yacht kept her happy until 1955, when she swapped it for the 44-passenger propjet of Rafael Trujillo, dictator of the Dominican Republic. The vessel then fell on hard times, eventually moldering away in Panama until rescued, revived and restored by a group of wealthy Germans four years ago. They turned her into a cruise ship, and her German captain and international crew make full use of the sails.

The Smithsonian Associates Travel Program recently ran a Caribbean study tour aboard this beautiful, elegant, historic old vessel, and perhaps because I am expendable, I was given the assignment of serving as Smithsonian representative. Thus I was put in the position of having to share such activities as eating copiously, basking in the Caribbean sun and snorkeling over patches of coral.

Sailing from Antigua with about 60 passengers, *Sea Cloud* cruised in the Lesser Antilles: Iles des Saintes, Bequia, Mustique, Mayreau, the Tobago Cays, then north again to Martinique and back to Antigua. Do not for a moment think that we were mere sybarites straining wistfully after the sinful opulence of half a century ago. Never! This was a study tour. We learned about the history, archaeology, economy and current problems of the Caribbean. We discovered that this seemingly balmy and serene area should never surprise us when it erupts in violence. Large parts of the population are young, unemployed, educated, mobile—wherever possible—and potentially turbulent.

So we learned, and became wiser as well as lazier, sleeker, more sunburned. I learned something else, too. Smithsonian Associates are a remarkable breed: adaptable, diverse, amusing, sparkling with intelligence. When a lecturer asks a Smithsonian crowd for questions at the end of his talk, there is a short, breath-drawing pause and then he gets them, one after another, all complex and thoughtful.

One of our group knew celestial navigation. So he instructed others in the use of the sextant and explained the way a navigator gets a bearing. A retired engineer in the group took the time to expand on the details of the ship's four diesels. People who knew something about sailing interpreted for others the planned chaos of setting sail, that moment when muscu-

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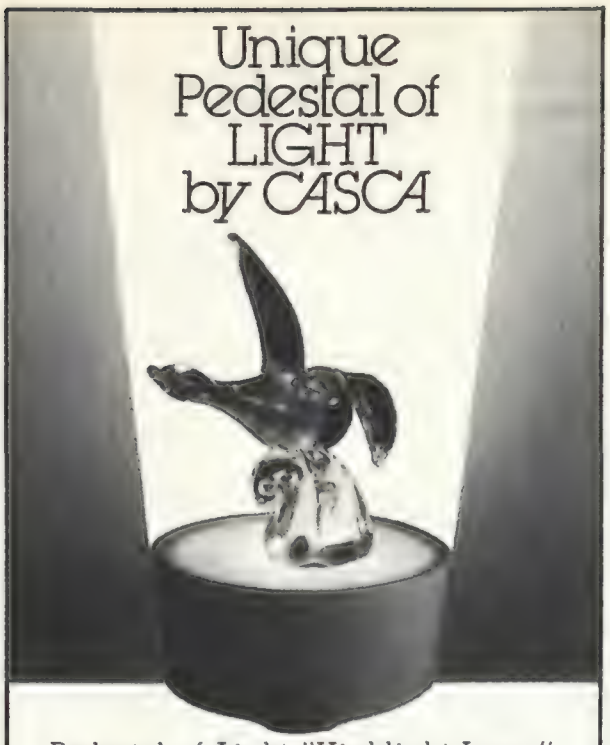

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lar young people in faded blue shorts and tee shirts clambered up ratlines, shuffled out on the footropes of the yards, high above the deck, and got the stops off the main topgallant and royal.

Finally, all of us experienced the little-known glory of feeling a beautiful ship heel and surge through brilliant tropical waters, driven by a score of sails, drum-tight in the steady drive of the trades.

Nannie Clay Shanahan

Serving on the staff of a magazine such as this demands a close interaction of personalities. Diverse people, all expert in their ways, are crammed together and aimed toward a common goal. We all learn to fit each other; we settle at last into a sort of pattern like the molecules that make up a bar of gold. And so when one of us goes, the others suffer a convulsive wrench. The whole ingot is somehow damaged.

Nannie Shanahan has been on our masthead since the August 1971 issue. She worked in production for 13 months before that. She was one of the few, one of the little band that got SMITHSONIAN off the ground.

"Production"—the title under which she was listed on the masthead—is an empty word to describe what Nannie did for us. Every month there comes a time when all the parts of a magazine come together. Illustrations have been reproduced; text has been checked and fitted; ads are ready. Editors, advertising salespeople, the whole magazine staff may dine a little longer and sleep with easy hearts. But in the printing plant the presses wait for the word to run. And "Production" must take the last long look and make a host of irreversible decisions that determine the quality of the finished magazine. It can be a gut-wrenching job.

Month after month, often alone in the middle of the night, Nannie gave the nod, the great presses thundered and the magazine poured from them while the rest of us slept.

To get all of the ingredients of the magazine ready for the printer, she worked incredible hours and maintained a stern self-discipline. Tall, impeccable, she was entirely dedicated to seeing that deadlines were met and quality was maintained. If a columnist was late with his copy, he could expect to hear Nannie's voice on the telephone, tight with out-

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rage. And then she would quietly pick up the slack herself so that, magically, the copy would still get in, and the magazine would get out—on time.

Nannie died February 28 after a stubborn, courageous battle with a pernicious disease. And abruptly, her magazine colleagues realized that we barely appreciated this complex and surprising person. Dedication, discipline, strenuous defense of excellence—we saw all these daily and mightily respected them. We knew she came to the magazine from a printing company where she was editor/writer, that she handled layout and design, that she had been a top-rank scholar.

No wonder she so often embarrassed editors by spotting flaws in copy that was supposed to be clean. Again the voice on the phone: Did you really mean such-and-such sentence to read like *this*?

No, Nannie, we didn't. Thank you.

She rode herd on editors, but when she was with printers another facet caught the light. She talked their language. They recognized her expertise and respected it. And there was an easy exchange, laughter, jokes that she liked.

But there were other facets. Nannie lived in a simple, gracious style and she fully appreciated fine food and wine. When she traveled, as she did frequently with old friends, she enjoyed great restaurants and splendid cuisine. Moreover, she was a chocolate freak. She loved it, hunted it down, pounced upon it.

She was an avid reader of the classics and knew and loved good music. Whenever in New York she went to the Met for an evening at the opera; when she had heard a concert or watched a ballet in Washington, she couldn't keep from mentioning it with a smile and a light in her eye—before the day's work started.

Through every area of Nannie's life, religion was a common denominator. This was her most important facet—devotion to her church. She was an old-fashioned Catholic, a strict adherent to old laws and concepts. One of the special moments of her life was when the choir of which she was a member sang before the Pope during his 1979 visit to Washington's Mall.

There was one other quite wonderful side to this extraordinary woman. She was an experienced pilot, owned a Cessna Skyhawk and flew on long cross-country jaunts—a marvelous release from the tensions of her job. Because long ago I too was a real pilot, she sometimes let me glimpse this side of her life. I recall her story of blundering into a restricted area while cruising over Virginia.

It was a section of the sky reserved for military aircraft, and by the time Nannie realized what she had done, she was too far into it to turn back. She flew straight on, trying to act innocent, and soon she saw two tiny dots in the sky that grew, in a split second, to two fighters, fully armed. They howled past her, wheeled around, dropped flaps to slow down and neatly took up station, one on each of her wings. Thus she passed through the zone.

Nannie Shanahan: Production. A fascinating, rewarding person whom we needed around us. By writing this small memoir I have violated a deadline, and I can almost hear the phone ringing to let me know it. How sad that it doesn't ring. For Nannie has passed through our zone and gone onward. And we are left behind.

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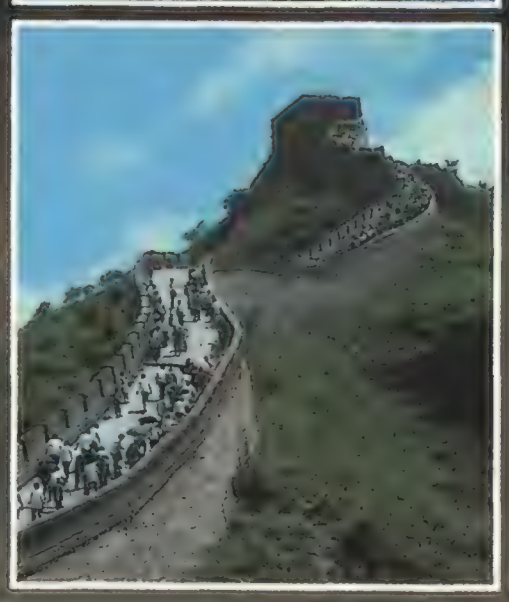

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Phenomena, comment and notes

All of us have lots going through our heads—cosmic rays, solar neutrinos and gamma rays from decaying atoms

On a warm spring evening three million years ago, when the only people around were australopithecines, a brilliant ball of radiation, protons and electrons was flung out of the tortured gas cloud around the glowing core of what once had been a star. No animal, primate or otherwise, had noted the "new star" in the sky when it burned brighter than Venus after sunset. For eons the protons fled silently through the interstellar darkness, all curving through the magnetic fields of the galaxy's spiral arms. A few spiraled toward the Earth. At long last one slammed into the atmosphere high over central Maryland, driving a shower of daughter particles and photons to the ground like a cosmic shot pattern 70 yards across. Some of them hit me.

At about the time the sun was coming up for the third day of the battle of Gettysburg, a nondescript orange star 180 trillion miles away experienced a small but intense flare at its surface, shooting a pulse of electrically charged particles—including some billions of protons—up and out of its gravitational well. Just 119 years later, some began striking the Earth, including my part of Maryland 40 miles from Gettysburg.

Eight minutes ago, while I was typing the word "interstellar," four protons came together in the sun and after a complicated dance ended up as two protons and two neutrons—a helium nucleus—which threw off "little neutral ones," two neu-

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trinos, in the process. With no mass (we think) and no electric charge, the neutrinos zipped through the seething hell of the sun's interior as though it wasn't there, and headed straight for the blue and white of Earth. And Maryland. And my head.

A split second ago, a stray uranium atom in the concrete of my house's foundation broke up, falling down the atomic ladder to become thorium and eventually lead, and aiming a relativistic electron at a spot just behind my left ear.

In the same split second an atom of radium in my skull decayed into radon, emitting a gamma ray straight into my brain. The gamma ray stripped the electrons from several atoms in a neuron and turned one mild-mannered molecule into an electrically charged free radical that ran amok until it formed an unwholesome union with an innocent bystander.

Poetic license allows me to have all this occurring simultaneously inside my head, but the phenomena themselves are all quite real. Cosmic rays strike each of us more than once a minute. About four times a second a radium atom in our own bones disintegrates. Radioactive atoms in the dirt, rocks and water are falling apart all around us, bathing us in an imperceptible glow of alpha, beta and gamma rays. All of this is part of the normal background radiation. It is ionizing radiation, the kind that breaks the electrically neutral atoms in my body down into positively charged nuclei and negatively charged electrons, particles looking for action. It creates free radicals, fractions of molecules, many of which are intensely reactive, positively panting to combine with something else. It can mean havoc at the molecular level, which some scientists suspect is one of the reasons we deteriorate with age.

Radio waves beeping in from the pulsars and hissing in from quasars, the microwaves from the clouds of alcohol and formaldehyde floating between the stars are nonionizing, although it's by no means certain that their sum total effect is zero. I just like to add them in when I'm daydreaming about what's going through my head—literally—while I'm sitting around. I never quite believed the woman who worked in the same building I did in New York, who said she was receiving messages from extraterrestrials—through the fillings in her teeth. But I like

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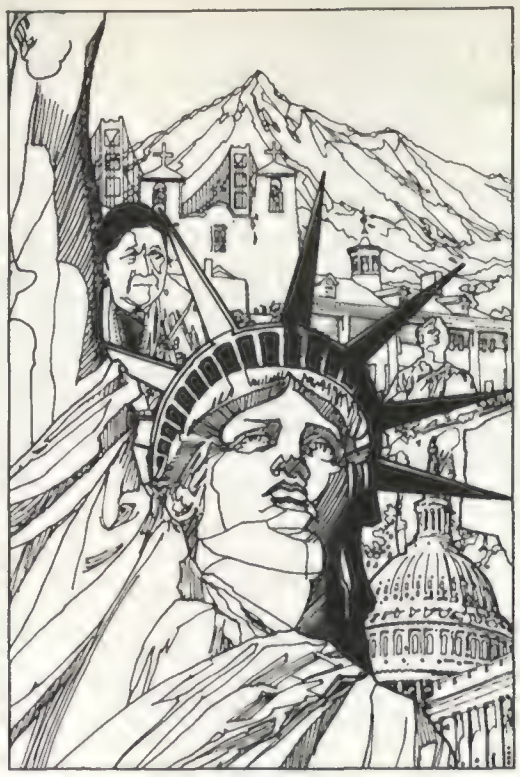

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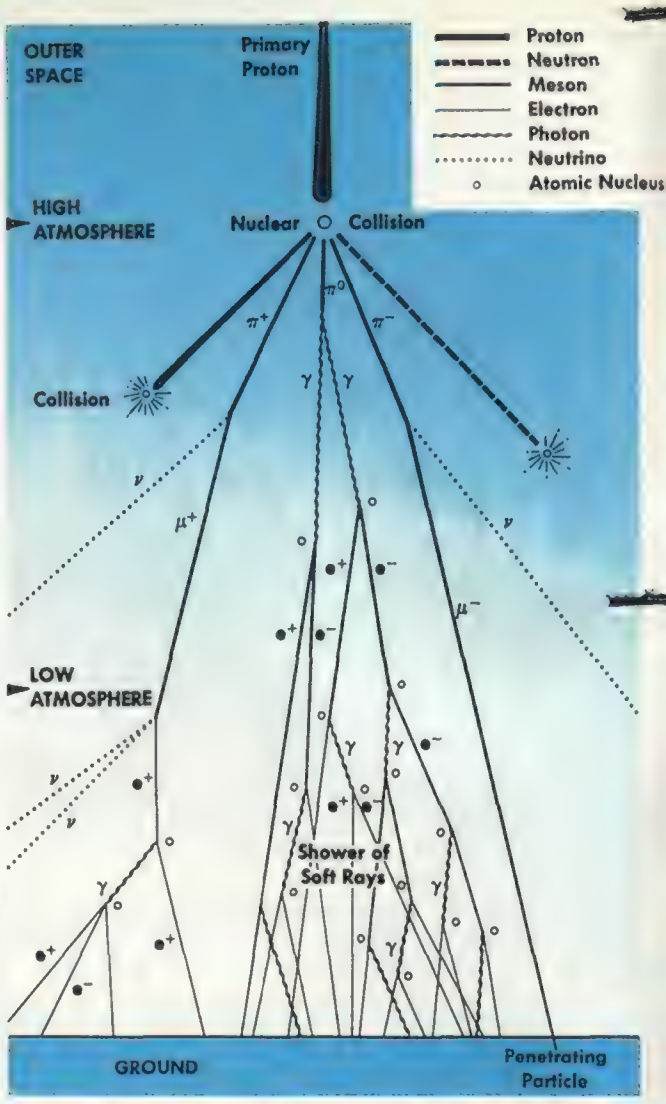

Primary cosmic ray, a proton, strikes an atom high in the atmosphere (top), setting off cascade of secondary rays. Such cosmic showers hit us continually.

to try to convince myself that a minor headache at four in the afternoon is the direct result not of a sherry at lunch, but of a star that blew up tens of millions of years ago, quadrillions of miles away, sending a proton halfway across the galaxy just to find me. Talk about a cosmic connection!

(At the other end of the scale, if some of the newest theories in physics are right, it may turn out that the protons in our own bodies decay into messy things like pi mesons and gamma rays. I'm still trying to sell a cartoon of two men lunching at their club. One man is holding his chest in obvious pain. His friend asks, "Angina, Charles?" and the man replies, "No, proton decay.")

I do worry that we may have overloaded ourselves by adding so many sources of ionizing radiation in the span of a single human lifetime. Now we get medical X rays and the residue from weapons testing and power-plant releases. And we also live in a sea of lower energy, nonionizing radiation that is of our own making: microwaves from radar and telephone relays,

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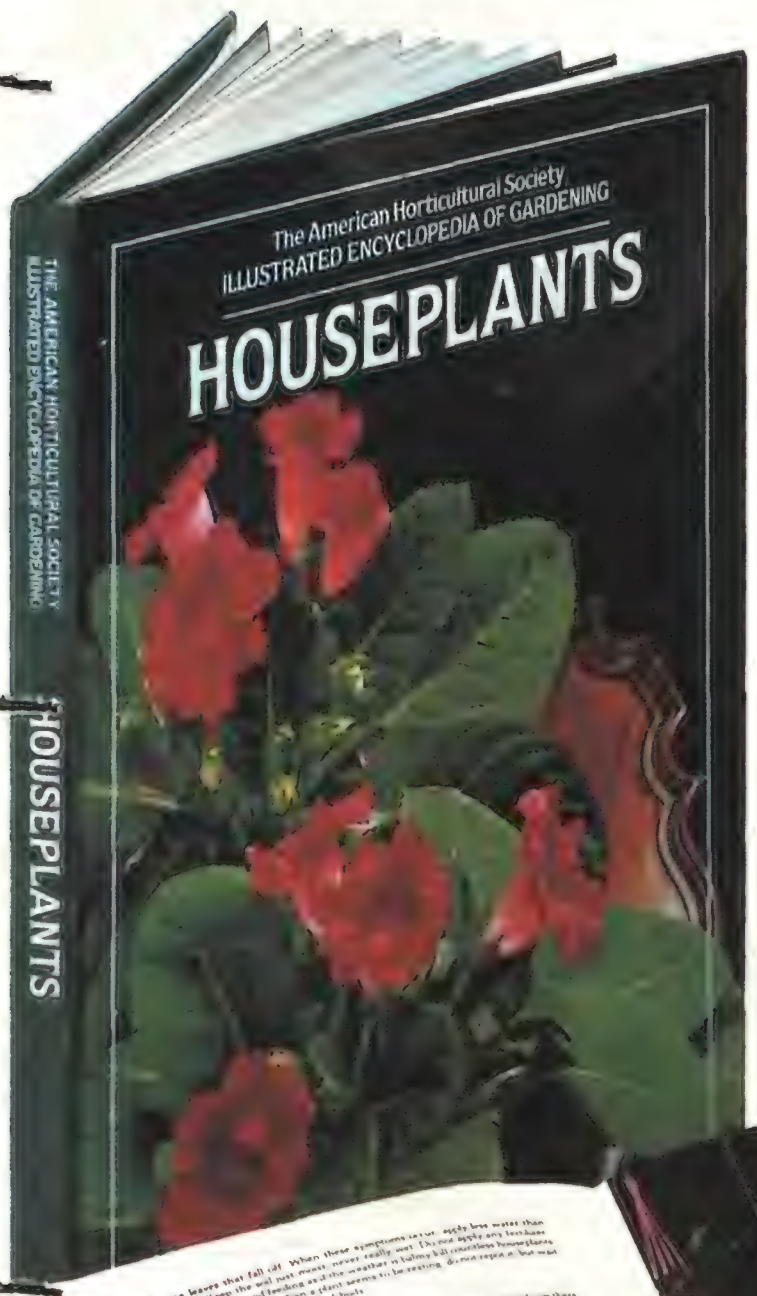

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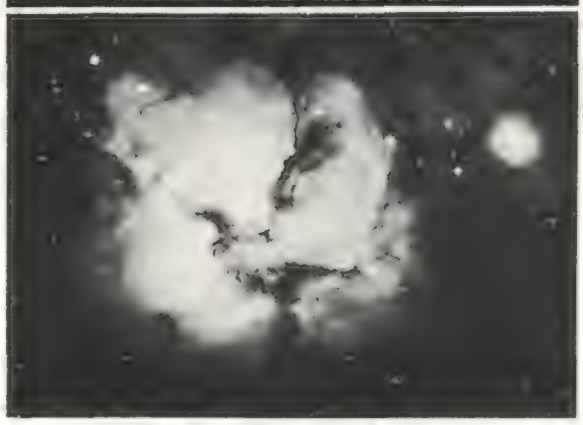

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high-frequency radio waves from TV transmitters. (What if television can make us crazy without our even turning the set on?) Since the Second World War the government has continuously lowered the allowable limits of exposure to almost every kind of radiation, which means if nothing else that we don't know all the answers yet. And if a person dies five years earlier than he or she would have without all the extra radiation, there is no way to know that, much less exactly what did it. (Those of us who smoke don't worry much about radiation, actually; we deal in higher probabilities.)

But I'm not here to sound the alarm. It's the natural radiation I'm interested in, the crossfire of invisible waves and infinitesimal particles that unites us with the rest of the universe. Even the ones that do damage are so very faint that we never feel them. But I like dealing in the very small. I once read somewhere that reducing the weight of a car by 400 pounds would improve its fuel economy by one mile per gallon. I translated that to an extra 13.2 feet per gallon for every pound of hamburger wrappers and soda cans I rake out of the car on Saturday mornings. As a pedestrian I often insist that a car make its right turn before I cross: not making the car wait with its engine running conserves fuel, reduces air pollution, and helps out with the country's balance of payments. I'm not above thinking that the argon atom I just inhaled was once exhaled by Cicero at the Forum in Rome.

So, faint emanations from the stars are a natural for me. They are small reminders of large truths. We are, after all, of the stars. The iron atoms in our blood, the nitrogen in our DNA, and virtually every element heavier than hydrogen and helium was formed not in the Big Bang but in the cores of stars, which then had the considerateness to explode, sharing the wealth with us who were to come.

Many years ago I saw, at the American Museum of Energy and Science at Oak Ridge, Tennessee, a spark chamber that lit up and made a sharp cracking sound whenever a cosmic ray passed through it. In this age of miniaturization, I'd like one I could wear on my wrist. A gentle chime every minute or so would be a true message from outer space, a tie line telling me of the deaths of stars. It would be a call from home.

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Points of origin

Greek foot racers with shields adorn
Attic vase from sixth century B.C.

The modern mania for running recalls the fleet-footed exploits of past eras, heroic and humble

Joggers. Runners. Marathoners. Who would have thought they could garner *so* much attention in the public mind? Actually, however, their notoriety is even more surprising when you consider their origins. Early in the 16th century, the ability to cover ground quickly on foot had given rise to a special class of servants, the footmen. We think of them today as glorified butlers, but for some two centuries, from the 17th to the 19th, the footman's job was quite specific: he was to run alongside his lord's coach to make sure it was not overturned by ditches or tree roots, and to run ahead to prepare for his master's arrival at the next inn.

In 1614, Sir Thomas Overbury, the essayist and great collector of 17th-century "characters," noted several things about a *foote-man*: "He will never be a staid man, for he has had a running head of his owne, ever since child-hood"—Overbury liked to play with words, as is quite plain to see. "Hee lives more by his owne heat then the warmth of cloathes"—which any modern jogger can certainly attest to. And finally, "Tis impossible to draw his picture to the life, cause a man must take it as he's running; onely this. Horses are usually let bloud on S. Stevens day: on S. Patrickes hee takes rest, and is drencht for all the yeare after."

Overbury was neither exaggerating nor punning by asserting that footmen were always on the run. Their lives were consumed in accompanying their betters around the countryside or in training for upcoming travel. Indeed, the pace must have been staggering. But Sir Thomas also lets us in on another custom, that of bleeding the horses on St. Stephen's Day, December 26. The reasoning was clear: since you bleed humans in order to rid them of toxic "humours" in the system, why wouldn't the same tactic work with animals? Thus, a verse of 1580: "Yer Christmas be passed, let horsse be let blood, For manie a purpose it doth them much good: The day of S. Steven, old fathers did use, If that do mislike thee, some other day chuse."

Because running footmen were in effect a species of chattel, as were all servants, they, too, were to have a day of therapeutic rest. According to Overbury, St. Patrick's Day was selected. History is silent on the precise reasons for choosing that day, but the answer is doubtless bound up with the number of Irishmen who excelled at the trade. In any case, horses have as much to do with St. Stephen as footmen have to do with St. Patrick: absolutely nothing.

It was only a matter of time before gentlemen made a more obvious connection between footmen and horses—that you could race them and wager on the outcome. From early in the 17th century, we have evidence that this was done. The best of such runners were called *celeripedians*, according to the early lexicographer Henry Cockeram, whose *English Dictionarie, Or An Interpreter of Hard English Words* was published in 1623. And in a 1625 tragedy by John Webster, an offhand remark uncovers the training regimen of racing footmen: "I have heard of cunning footmen that have worn Shooes made of lead some ten days 'fore a race To give them nimble and more active feet."

The world-class expert on the running footmen and pedestrians (or peds, as they were also called) is English Professor Earl R. Anderson of Cleveland State University. Anderson is an Anglo-Saxonist, but also a marathoner who runs at least 80 miles a week, and his passion for running has led him into the tangled wood of sport history. Using sources as disparate as old newspaper accounts, lawbooks and classic novels, Anderson set to work uncovering the history of 18th- and 19th-century wagering on races between footmen.

Anderson's research shows that the commonly respected and achieved distance for running footmen was 60 miles a day. As early as 1608, a footman in a London stage play is addressed as "Three-Score-a-Day" and later as "Seven-Minute-Mile." Such men would be the ultramarathoners of today.

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by the exhibition peds of the 18th and 19th centuries. In 1773, the runner Foster Powell covered the 402-mile round trip between London and York in five days, 18 hours. He coursed the same route again in 1790 and 1792, attracting large crowds as he went, and cut two and a half hours off his time. In the 1880s, six-day races were a major spectator sport in America, with fans dropping by the indoor arenas at 1 A.M. to check on the progress of their favorites. The victors in those contests often exceeded more than 60 miles a day. Apparently, the trick was to sleep as little as possible: about four hours was the optimum time. Anderson points out that the races were mercifully kept to six days in order to avoid breaking the Sabbath.

Nor is the tradition of great athletes who write books about their exploits a modern idea. In fact, an English writer and long-distance walker named Thomas Coryate (1577-1627) seems to have started the trend. Coryate apparently walked from Venice to England, and then ended his days with a trek from Europe down through Mesopotamia to India, where his feet and his life gave out. The book that detailed his wanderings was oddly titled *Coryats Crudities, Hastily Gobled Up in Five Months Travells in France, Savoy, Italy, Rhetia, Helvetia, High Germania, and the Netherlands* (1611). What made his book memorable, in addition to his endurance and eccentricity, was his introduction of a new form of technology to English life: the dining fork, then all the rage in Italy.

Because of all this celebrity, Coryate's village church back in Odcombe, Somerset, proudly displayed a pair of his long-distance shoes, where they are reputed to have hung from 1612, at the start of his second trip, until sometime early in the 18th century. For more than a century, the shoes were venerated much the same as the gear of modern sports heroes.

Literary interest in running extends all the way back to Homer with the legendary feats of swift-footed Achilles. But the funeral games in the twenty-third book of *The Iliad*, which have been thought to represent one of the highest achievements of sporting history, include a short race won by a prayerful Odysseus. His patron Athena had caused his closest opponent Aias to slip on ox dung near the race's end; truly, Odysseus had good friends in high places.

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was the 25 miles run between the plain of Marathon and Athens. The most famous retelling of this story appears in Robert Browning's 1879 poem, *Pheidippides*, titled in honor of the Greek athlete who made the trip. But Browning's lines conflate several stories found in the classical sources, in which the runner's name is variously given as Thersippus, Eucles or Philippides.

The time was September of 490 B.C. and the Persian army was about to crush the Greeks, according to the account in Herodotus. The Athenian generals, huddling before the fight, dispatched the athlete Pheidippides on foot to Sparta (about 160 miles) to ask for aid. He covered the distance in two days; not bad, equaling the level of the 19th-century peds. Poet Browning recounted the scene like this:

. . . like stubble, some field which a fire runs through,/Was the space between city and city: two days, two nights did I burn/Over the hills, under the dales, down pits and up peaks. Into their midst I broke: breath served but for "Persia has come!

Unfortunately, Sparta found reason to stall a few days. Pheidippides then ran back to Athens with the bad news. Then off again to fight at Marathon. Finally, he ran back to Athens to deliver the word on the upset victory at Marathon.

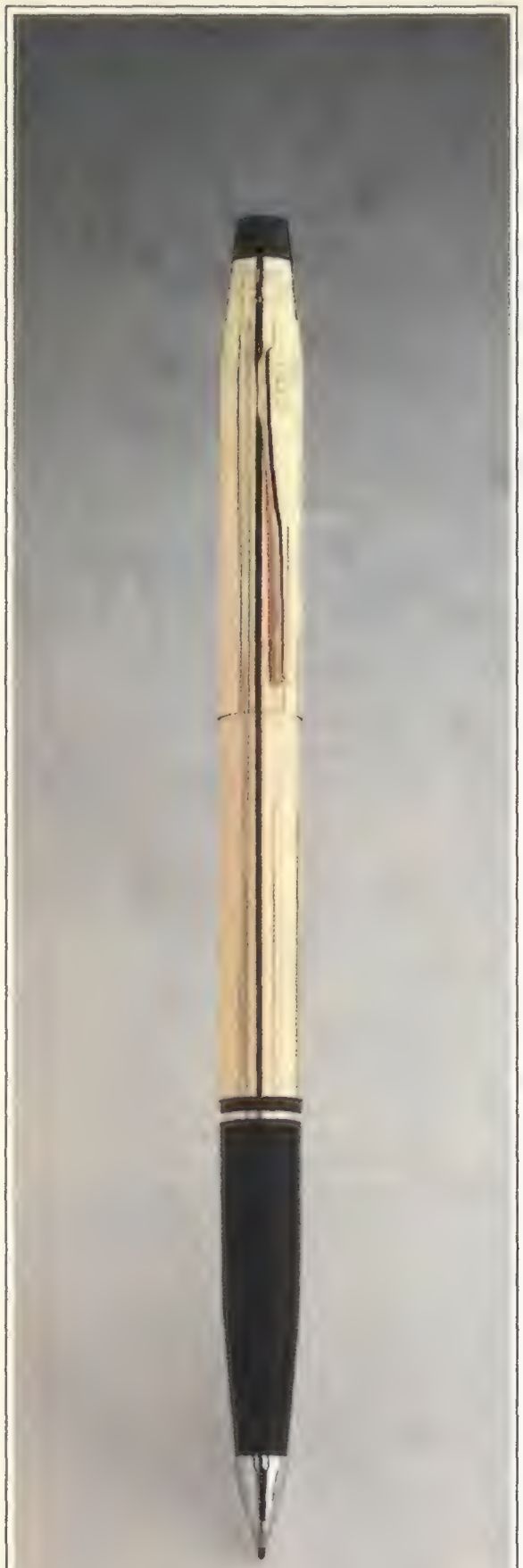
Browning again:

So to end gloriously—once to shout, thereafter be mute: "Athens is saved!" —Pheidippides dies in the shout for his meed.

In 1896, at the first modern Olympiad, the so-called marathon race was invented. Since the games were held in Athens, the very course Pheidippedes ran was used again. It is fitting that a Greek athlete took the laurels that day. What is not so fitting is that Pheidippides was commemorated by just his 25-mile trot, since the frantic dash from Athens to Sparta and back was so much more important and demanding.

And what does all this mean for us moderns, out in our $75 running shoes chasing the dream of cardiovascular health? Well, one could say, with a 17th-century writer, that "fear makes good footmen." Others might prefer the following quotation, from the same period: "To jog sleepingly through the world . . . cannot properly be said to live."

Michael Olmert



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Article and photographs by Michael Winn

Following the trail of Marco Polo across the roof of Central Asia

For 2,000 years the fabled 'Silk Road' has linked Europe with the Orient; it has changed since Polo's journey—but not completely

"I've driven over a million miles in my lifetime," said Harry Rutstein, leader of our expedition across northern Pakistan's Karakoram Himalayas, "but never have I seen a single mile of road like this!" As our Jeep tires crunched inches from the edge of a loose dirt track that cut across the sheer face of a seemingly impassable gorge, I had to agree. Craning my neck over the precipice, I stared up in disbelief at 15 hairpin turns stacked neatly above like pleats of folded ribbon.

Except for the whine of four-wheel drive, there was silence as our driver, palms sweating, backed up once, twice, often three times to get around the hairpin turns. I sat helplessly over the rear bumper as it swung several feet out over the gorge, giving me a nightmare view into a 2,000-foot abyss.

After zigzagging like a tired ant up the side of the mountain, the Jeep finally reached the top and sped to a mud-walled hut where a lonesome peasant served us black tea with goat's milk. We squatted in a circle, glad for the solid ground and warm drink, and declared our driver, Hassan Abdal of Chitral, Pakistan, a hero. He smiled knowingly, but only later nonchalantly mentioned that five Jeeps had already fallen into the gorge that year—after they made improvements on the road.

This dirt track is the fabled "Silk Road," and the improvements over the last 2,000 years have never made it completely safe. Where landslides erased the old road, the standard repair technique used for the

Expedition leader Harry Rutstein en route over the Shandur Pass. He is tracking Marco Polo's route.

Snowcapped peak Tirich Mir, more than 20,000 feet high, is backdrop for Grand Mosque of Chitral.

Vehicle clings to mountainside in Yarkhun Valley gorge on "improved" road, with 2,000-foot drop alongside.

Dots on a spare landscape, expedition members skirt Shandur Lake on eastern edge of the Hindu Kush.

last millennium is still evident—flat slabs of stone jammed horizontally into the cliff face, propped up by branches haphazardly stuck into crevices in the cliff wall beneath.

Yet millions of fortune seekers have trod this treacherous road through the Yarkhun Valley in northern Pakistan, risking their lives to cross the snow-tipped passes of the Hindu Kush and the Karakoram Range. They were merchants and missionaries, pilgrims and soldiers, coolies and kings, all traveling the famous Silk Road connecting the two great empires of the world, Rome and Cathay, as China was then known. Climbing over these mountain crossroads were huge caravans with hundreds of merchants and pack animals, gone for eight or nine years at a time.

Some travelers began in Ch'ang-an (now Xian), the Silk Road terminus in China, and crossed the Himalayas into Central Asia, ending at the shore of the Mediterranean. Others traveled east, to India, and back. Middlemen traded south to Arabia and Africa, north to the steppes of Russia, and as far west as Cádiz, 8,000 miles away.

By camel over blistering deserts, by ship across the blue Mediterranean, over freezing mountain passes by yak and through the great bazaars of ancient cities moved the treasure trove of the world on the Silk Road. From Java arrived nutmeg, from India cinnamon and ginger; musk from Tibet, perfumes from Arabia, diamonds from Golconda, rubies and lapis lazuli from Badakshan, turquoise from Yedz, pearls from Ceylon, muslin from Mosul and silk, porcelain and sendal from China. The West sent back gold and silver, glass, amber and woolens.

Michael Winn, known as "Miko Polo" to his friends, is a New York free-lance writer and photographer who has traveled in 55 countries for work and fun.

The raft this local boatman is rowing on Ghizar River is made of inflated pigskins lashed to timbers.

Today this portion of the Silk Road in Pakistan is rarely used by merchants. The Pakistan army maintains the road in case of another border war against India or attack by Russia, but its main users are local villagers moving to and from their summer pasturage high in the mountains. I was fortunate to witness one of these summer migrations crossing the 12,250-foot Shandur Pass in a great caravan as of old. Stretching out over several miles were herds of yaks, goats and sheep, following the women and children on horseback.

These tribesmen were surprised to meet our small American caravan traversing by foot, horseback, Jeep and pigskin raft the 300 miles between Chitral, near the Afghanistan border, over the Shandur Pass and into Gilgit. There we planned to meet the modern paved Karakoram Highway, the new Silk Road, and to continue a hundred miles north toward the Chinese border.

Leading our expedition of three Americans was Harry Rutstein of Baltimore, Maryland, the most dedicated in a long line of adventurers seeking to retrace Marco Polo's footsteps on the Silk Road. Ten years ago Rutstein quit a successful business career to devote his full time to researching and retracing Polo's exact 12,000-mile meandering journey from Venice to Cathay. He spent four years poring over every historical reference to Polo's route he could find, cross-referencing them with old maps and local records. He wrote to officials in the countries traversed by the road for old names, delved into the Library of Congress. It was a mammoth task, since the original edition of Polo's *A Description of the World* (known to us through later editions as *The Travels of Marco Polo*) is lost, leaving Rutstein to find his way through the maze of some 140 other editions in a dozen languages, many with conflicting versions of the travels.

Crops grow in sheltered valley of Hindu Kush at altitude near 10,000 feet, between Chitral and Mastuj.

In 1975 Rutstein set off from Polo's home in Venice, now a pizza parlor. He traveled across the Middle East through Israel, Cyprus, Turkey, Iran and Afghanistan, following the Silk Road taken by Polo, who traveled along it between 1271 and 1295, spending many years at Kublai Khan's court in China.

Rutstein's inspiration for the journey had come from the late 1930s Smithsonian Institution radio show, *The World is Yours*. As a boy of eight he sat glued to the radio each week as the show explored new cultures. Forty years later he was living that adventure, following the second leg of Polo's journey across the Himalayas.

Harry's passion for authenticity led him—and us—to travel the vestigial old, old road (a mere track) on horseback whenever possible, leaving the Jeep to bounce along on the old "improved" dirt road alongside. In the countryside we camped around fires of yak dung and ate Pakistani food, mostly dal—a lentil stew dipped out with pita—and lamb or goat, washed down with milk-laced strong black tea. Then we would fall into exhausted sleep, and were on the road before dawn next day. Next year, we plan to follow the most ancient part of the Silk Road across 3,600 miles of China.

Originally the Silk Road was not a trade route, but a cultural road. The Chinese emperor Han Wu-Ti mounted expeditions along it beginning in 126 B.C. in order to gain access to the legendary Ferghana war horses, said to possess magical strength. This road probably reached as far as Parthia, and Wu-Ti's army used it to control his expanded domain. The road was frequently used by invaders during its long and checkered history, but it was also the path of merchants, and the silk trade that gave it its modern name.

Silk has always been surrounded by an air of mystery. Even learned Romans like Virgil and Pliny thought silk grew on trees. As it became popular, Roman critics complained that the high value placed on silk clothes was sapping the economy of the empire.

The Chinese did their best to promote myths about the origin of silk in order to preserve their monopoly on its trade. They had inspection stations along the trade route to ensure that no one smuggled out the secret of the great art of weaving silk—the silkworm. A popular legend tells of how a wily king of Khotan persuaded his bride-to-be, a Chinese princess, to hide the worms in her fancy coiffure. The guards dared not inspect it and the secret escaped. Another story claims that two sixth-century Nestorian monks carried silk-

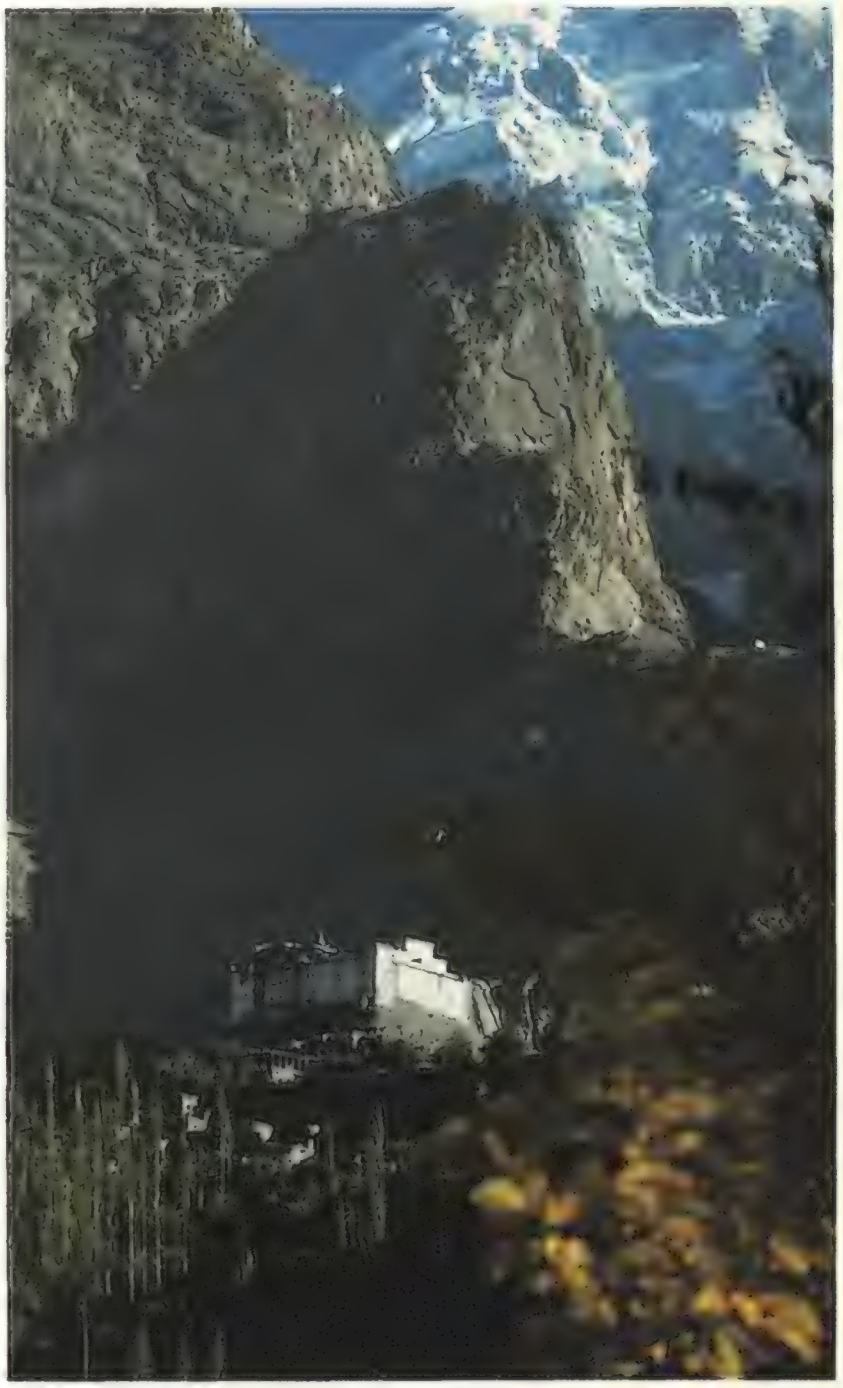
worms out of China in hollowed staffs. It may be true, as the medieval Byzantines began a silk industry that became one of Byzantium's most important economic operations.

The history of the Silk Road, however, is more than one of trade. It encompasses the entire dialogue between Eastern and Western cultures before modern forms of transport bypassed it. The sale of silk was far less important than the flow of armies, religions and ideas over the road.

The Golden Age of the Silk Road came during the T'ang Dynasty (A.D. 618-907). Its capital, Ch'ang-an, was a very cosmopolitan city, with people from all over the world among some two million inhabitants. This international influence on style and fashion is reflected in many of the articles excavated from tombs, although the individual objects were made in China.

The second period of great wealth from trade along the Road was during the reign of Kublai Khan (1260-1294). Marco Polo's famous *Travels* detailed the splendors of his capital, Kanbalu (now Beijing), which may have been the largest city in the world with a "multitude of inhabitants . . . greater than the mind can comprehend." Polo was suitably amazed that "To this city everything that is most rare and valuable in all parts of the world finds its way," but was especially impressed with a road system "so stupendous and costly that it baffles speech and writing." Polo described the "yambs," or posting stations, every 30 miles as having up to 400 horses each. He estimated the Great Khan kept a total of 200,000 horses and 10,000 posts on the Silk Road in an empire that stretched from the Yellow to the Black seas.

Section of old Silk Road traversed by Rutstein expedition is in red; inset, the entire route.



Tibetan-style fort at Baltit was headquarters for ruler of Hunza. Former kingdom is now under Pakistan.

Blue-eyed descendants of the Greeks?

The 300-mile stretch of the Silk Road we traveled was especially strategic, as much traffic from the Mediterranean, Middle East and Africa was bottlenecked through its narrow mountain passes or onto a parallel road a few miles north that followed the Oxus River in Afghanistan along the Wakhan Corridor. Whoever commanded these passes controlled access through the Himalayas to the riches of Cathay.

I stopped in the village of Mastuj to visit the 20-foot-high mud-walled fort that still stands guard over the Yarkhun Valley. This was on the highway used by practically every Central Asian power that invaded in the last 2,000 years. Alexander the Great arrived in the fourth century B.C., and I saw blue-eyed children with curly hair in Mastuj and other Silk Road villages, said to be the descendants of his soldiers. The Greeks were followed by waves of succeeding armies—Parthians, Kushans, Sassanians, White Huns, Chinese, Tibetans, Arabs, Mongols and Turks.

Buddist figure carved into cliff on road is 20 feet high. Holes once held supports for wooden shrine.

In the 19th century the British used this area as the staging ground for "The Great Game"—the race to keep strategic control over this gateway to the Indian subcontinent from Russia. Rudyard Kipling took the theme and made it into the backdrop for his novel *Kim*. Today the Russians are still playing "The Game." After invading Afghanistan, they annexed the Wakhan Corridor along the Oxus River in 1980. This branch of the Silk Road leading into Pakistan is now guarded by Soviet troops stationed only a few dozen miles from Mastuj.

Mastuj still has its own prince, a handsome man of about 30, who dresses modestly in the baggy pants and long flowing shirt worn by peasants, topped by a *bakhol*, a wool cap. He greeted me with an English accent that betrayed an education at a British-run boarding school. "I am Prince Sikander Ul-Mulk," he introduced himself. "That means from Alexander, but I am Mongol, not Greek. My family is descended from Tamerlane," he added proudly.

His family's 500-year rule ended in 1972 when the Pakistan government seized control. The Prince now spends his time farming and tending his apricot and walnut trees, and coaching the local polo team.

"The British discovered polo in Asia," the Prince said, "and turned it into a polite gentleman's sport. We used the game for centuries to settle land disputes between villages. It is a much rougher game here as there are basically no rules. The same horse and rider must play for the full hour without substitutes, rather exhausting at these high altitudes. There is lots of excitement and noise—each team has its own musicians with drums and flutes. Unfortunately, it can be dangerous. Riders and spectators have been killed."

Aside from a telephone with a hand crank at the police station, I saw little evidence of modern life in Mastuj. Agriculture has not changed in a thousand years. The soil is tilled with wooden plows pulled by a couple of cows. Wheat is threshed by walking cattle over it. It is then winnowed by tossing it into the air with a wooden pitchfork, letting the wind separate the grain from the chaff. I asked the prince what he would like most to improve his life in the Himalayas, and he showed surprising enthusiasm for new technology. "If you have got an expert on solar energy or wind generators," he answered, "send him up. I'll be happy to trade him some land and a house for his services."

We departed Mastuj for Shandur Pass, two days' march. The changes in scenery were dramatic, as the Pass marks the dividing line between the Hindu Kush and the Karakoram Himalayas. Hindu Kush is said to mean "Hindu Killer," for according to one legend any Hindu would be killed if he encroached on this sanctuary of Islam. I walked between the soft, rounded folds of the Hindu Kush that lay in rows, like giant swells at sea sculpted in earth. The graceful sweep of crumbling sedimentary rock was vaguely suggestive of some ancient buried civilization.

Wayside inn at Bumi has beds of rope which support quilted pads. Ensemble is completed with blankets.

next generation. The most memorable sign of change along the Silk Road is clusters of small children studying their schoolbooks outdoors with the majestic snowcapped Himalayas as their classroom. The more progressive areas such as Hunza even have classes for girls. Only 20 years ago the Mir, or king, of Hunza had permitted education only to royalty, and even then only religious texts were allowed.

The nearly universal religion in Pakistan has been Islam for the last 1,200 years, and today the majority of its 80 million people are Sunni Moslems. Yet, curiously enough, a great chapter in the history of Buddhism was written here, where Buddhist monks traveling from India to China along the Silk Road passes of northern Pakistan encountered an important marriage between Indian Buddhism and Greco-Roman art. In the ancient country of Gandhara, the center of which was near the modern Pakistan city of Peshawar, throve a cosmopolitan civilization incorporating elements from the Hellenistic kingdoms of Central Asia and the heartland of Indian Buddhism. (Selections from the Metropolitan Museum's exhibition of painting and sculpture of these times begins on page 56.)

Previously, the Buddha had been represented in India only by symbols—a wheel, tree, stupa or footprints. But here Buddha was shown in human form, with Hellenistic features—a straight, Apollonian nose, wavy hair—and wearing the stylized folds of a Grecian chiton. Near Gilgit evidence of these early pilgrimages

The Karakoram rose more abruptly, like an explosion of the Earth's crust frozen in space. Even its name rings with a howling fierceness: it means "black rock." From Shandur Pass, as we traveled northeast toward the Hunza Valley and into the heart of the Karakoram, we entered the highest domain on Earth—19 peaks above 25,000 feet. It includes K^2, the world's second highest mountain at 28,250 feet, and some of the largest glaciers on the globe outside the polar caps.

The waves of major invasions and centuries of passing traders have mixed the local racial stock with Central Asian tribes such as Wakhans, Khirghiz, Tadjiks, Mongols, Pathans and Gujars. I asked a Hunzakut farmer to describe his family tree, and discovered he had an uncle living in Kashi, China, and that his grandfather had been a Wakhan from Afghanistan. His younger sons were thinking of going even farther afield. The land is too scarce to be further subdivided, and they may go to work in the oil-wealthy Gulf States. Despite this mixing, an isolation persists in these mountains, detectable in the great diversity of local languages. It may disappear with rising literacy in the

Polo match in Gilgit opposed Pakistani Northern Light Infantry and Gilgit police. The infantry won.

Fabric shop in Gilgit bazaar is one of many dealing in abundance of Eastern and Western articles.

can still be seen—a giant 20-foot-high female image from the sixth century, carved high on a cliff face, in its day an important shrine on the Silk Road.

Today the leading field work on the silk routes through the Karakoram is being done by Professor Karl Jettmar of Heidelberg University. "Little is known about the history of the early Himalayan kingdoms," Jettmar said, sitting on a stool in his camp in the Hunza Valley. "The artifacts have been destroyed by flash floods, landslides, glaciers and earthquakes. The elements are very severe here. Yet a wealth of fascinating evidence has survived in rock carvings—there are more first-millennium A.D. rock carvings here than in any other place in Asia. My team has located thousands of sites. The inscriptions in early Sanskrit languages offer the first solid proof there was a kingdom called Lesser Bolor at the crossroads of trade between India, Central Asia and China."

Near Gilgit we saw rock carvings of stupas by Buddhist pilgrims on boulders near riverbanks, offered as prayers for a safe river crossing. Nearby on the Ghizar River I was surprised to find a centuries-old ferry system still intact—a primitive raft of inflated pigskins—and convinced the boatman to let me try to row it across. One pigskin deflated mid-rapids, dousing Harry, the boatman and me with icy water, giving us a taste of the fright the pilgrims must have felt. Rutstein, when we were safely ashore, dried off, and reflective, expressed his sentiments about his years of study and travel along the Silk Road: "I'm continually amazed at how little has changed. Seven hundred years ago Marco Polo talked about crossing a river in a similar pigskin raft. Imagine through how many generations this boatman's art has passed."

Sixty miles north in the legendary Hunza Valley I examined hundreds of rock carvings of ibex by local pagans. The carvers believed that the spirit of this sacred mountain goat, then plentiful, could not reincarnate after it was killed unless a symbol of it were drawn. Today few ibex or other local big game like markhor or Marco Polo sheep roam the valleys. Vegetation is sparse and expanded human population has led to deforestation. In Chitral a halfhearted sign was erected recently, announcing—in English—that it is forbidden to kill snow leopards. The sign is decades too late. One zoologist estimated there are fewer than 250 snow leopards left in the mountains of Pakistan.

The single biggest change in the history of the Silk Road in this area was the opening in 1979 of the Karakoram Highway through 500 miles of the Himalayas. The treacherous dirt branch of the old Silk Road I followed from Chitral met this paved highway in Gilgit. It has no hair-raising switchbacks, so traders can race trucks swiftly through the Karakorams at 70 mph. This highway is the first step toward a much-dreamed-about modern silk road, a trans-Asian highway linking China with the Mideast.

Like the original Silk Road built in the second century B.C., a primary function of the Karakoram Highway is military. The road is wide enough to allow two tanks to pass, part of The Great Game still being played against the Russians. But the Chinese are now using the new highway mostly to export the same goods that they have for 2,000 years. Chinese silk is today for sale in Gilgit, but other shops are filled with Western exotica, giving the town an almost carnival atmosphere: disco tape cassettes, ready-made business suits, Willys Jeeps and Massey-Ferguson tractors.

Everyone is prospering as a result of the Silk Road's being paved, but not all are content with the new wealth. Gulam Mohammed Beg, a Hunzakut who runs a rare book shop in Gilgit's main bazaar, had mixed feelings. "Yes, we are getting rich," he told me, "but this new road is ruining our society. It has brought new diseases and unhealthy foods from cans. In the old days we were like a big family—we climbed the mountains, we danced together every day in the winter. All couples got married on the same day, December 21, and afterwards shared a huge feast for one week. Now everybody is lazy and wants to get money for himself. But what can you do? The road is more important than our village."

Road is paved on new Karakoram Highway, which took 19 years to make. China is about 15 miles off.

Treasures of the Silk Road

Lost to view for centuries, these masterpieces reveal the artistry of Buddhist missionaries who sought converts from merchant caravans

The Silk Road described on the preceding pages remains a rough track of commerce along the crusted rim of the Earth, yet for hundreds of years it was something more than that—an avenue for the export of Buddhism from India east to China and Japan. The Buddhists were fervent and devout missionaries, and the road, with its hordes of potential converts, drew them like a magnet. The Buddhists created sanctuaries for travelers in a strange and sometimes dangerous land, providing caravanseries with both a safe haven and a new ideology.

The Buddhists brought their artistic traditions with them, and in their monasteries and cave temples they created scenes from the life of Buddha and Buddhist deities. These works were the billboards along the road, reminding those traveling in pursuit of profit that there were spiritual paths as well.

Some of the masterpieces of the period are shown on these pages; they are but a fragment of the riches in a distinguished exhibition at the Metropolitan Museum in New York called *Along the Ancient Silk Routes: Central Asian Art from the West Berlin State Museums*. The show, which runs from April 3 through June 20, has been made possible by a grant from International Business Machines. In it are more than 150 art objects dating from the fifth to the tenth centuries A.D., taken from archaeological sites in the vast region lying across the southern Soviet Union and northern Afghanistan, extending into western China.

The discovery—or rediscovery—of these treasures is one of the most triumphant and romantic stories of modern archaeology. In the tenth century Islam became the dominant religion of the region; Buddhist sculptures and paintings were defaced as heathen idols; paintings on the walls of limestone caves were scraped off and used as fertilizer. Buddhism went into an eclipse that would last for centuries.

The Western world first became aware of the lost art through the efforts of two British officers who trekked through the area from 1860 to 1875. They were soon followed by other explorers, and when a Russian scholar, Dmitri Klements, brought back photographs, manuscripts and pieces of wall paintings, his finds set off what became a massive archaeological treasure hunt.

Between 1902 and 1914 the region crawled with archaeologists—German, British, Russian, French, Swedish and Japanese. Their excitement was understandable, for they were discovering, after centuries of entombment and desecration, the spiritual, cultural and esthetic habiliments of an entire lost civilization.

The excitement—and sorrow—show in the words of Professor Albert Grünwedel, a renowned scholar of Indo-Tibetan Buddhism and leader of two German expeditions into the area. Of Khocho: "This is without doubt a forgotten Asian city of extraordinary interest. . . . Hundreds of terraced temples and grandiose vaulted edifices [serving] as a quarry for materials to build modern houses. . . ." And of Kizil: "What I have seen here goes beyond my wildest dreams . . . about 300 caves, all containing frescoes, some of them very old and fine."

The fortunes made along the Silk Road have vanished, but the art has lasted—and it is the art that marks the worth of a civilization for all time.

Head of Vajrapani, sixth century, an attendant of Buddha, found in Cave of the Statues at Kizil.

This pair of Uighurian princesses with East Asian features, resplendent in their ornate gowns and dating from the ninth century, was found in Temple 9 of the great complex near Khocho. The wall painting from a cave at Kizil, below, is of Mahakashyapa, one of the Buddha's most important disciples.

A powerful painting, accomplished on silk, is
of a holy man or Arhat, probably warding off evil.

Reverence for all life is portrayed in
delicate painting on silk of a hand and
flower, from eighth-ninth centuries.
Tiny wooden Buddha of the fifth century,
only six inches high, below, sits quietly
with hands folded in position of meditation.

Three inscrutable ninth century Uighurian princes, resplendent in fine robes and soaring headdresses, had themselves portrayed prominently, striding across a flowered carpet—as was customary among the royalty and wealthy merchant class of the day.

A delicately sinuous design distinguishes this decorative and spiritual painting, above, of a reverent Bodhisattva and attendant, eighth-ninth centuries. The temple banner, right, with its hieratic Uighurian prince, is the finest painting in the Berlin collection.

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The knowledge business

By Lorna and Raymond Coppinger

Livestock-guarding dogs that wear sheep's clothing

Old World mountain breeds with puppyish traits are proving to be a natural nemesis of coyotes, and also the stockman's best friend

Coyote, major predator of U.S. sheep, is meeting its match in guarding dogs that only look sheepish.

Early one morning a Massachusetts sheep producer walked out to the barn to feed his sheep. He swung the door open, but it took several minutes for the mid-March dawn to reveal the extent of the horror strewn about the floor. Most of his 44 ewes were lying there grotesquely, heads thrown back, covered with blood. Somehow, local dogs had found their way into the barn, even though the farmer had thought it was quite secure.

"There's no such thing," he said bitterly, "as a dog-proof barn."

The massacre put him and his family of four out of the wool-and-meat business for two years, and is a major reason that this farmer and thousands like him see more red than that of blood when they try to raise sheep. Yearly statistics show a truncated growth in the sheep industry. The 25 ewes slaughtered that morning contributed to the U.S. Department of Agriculture's 1979 total of 1,294,100 sheep killed by predators, ten percent of the domestic flock.

Figures like these explain why Texans have a new kind of hangin' tree—this one strung with four-legged coyote carcasses. Coyotes are shot from helicopters; they are hunted, tracked and gassed in their dens. They are trapped, snared and poisoned.

Maremma from the Abruzzi region of Italy guards sheep in project at New England Farm Center.

But defenders of wildlife also see red when they count up yearly coyote kills, and then add the numbers and kinds of other wild species affected by non-specific control methods. They are outraged at the idea of attempted elimination of any animal, especially a top-level carnivore, and they often treat sheep growers as the culprits, rather than the victims.

To defuse the high emotions on both sides of the predator control controversy and to find efficient, economical, environmentally sound methods of keeping coyotes from sheep, government and private researchers are concentrating on nonlethal techniques, including electric fences, chemical repellents, reproductive inhibitors and scaring devices such as automatic exploders and blinking lights.

Among these high-tech innovations is a low-tech tradition which saves thousands of sheep annually in the Old World: livestock-guarding dogs.

Dogs that protect sheep from predators? Dogs eat sheep; they are part of the problem, not the solution.

This was our reaction when the subject came up in 1976 during meetings with sheep industry leaders at the Winrock International Livestock Research and Training Center in Arkansas. We were there at the suggestion of William Dietel, president of the Rocke-

Dogs in sheep's clothing

Shar Planinetz puppy nurses on ewe in bonding study; even without nursing, puppies become part of flock.

On Coppinger farm, Shar pup forms attachment to sheep that will guide later behavior as a guardian.

feller Brothers Fund and a member of Winrock's board of directors, who knew that our research interests included predator control, Northeastern coyotes, and canine behavior and physiology (our sled-dog teams did well in Northeast circuits for many years). We were looking for a way to apply these biological interests to agriculture, and our hosts told us of a couple of enterprising ranchers—one in cattle, one in goats—who were using large Hungarian sheepdogs, called Komondors, to protect their livestock. They had heard rumors that dogs such as these had protected sheep for centuries in the Old World. Could such dogs adapt to sheep pastures here?

The implications for predator control were fascinating. But how in the world could dogs, especially large dogs, be trusted to protect sheep? Old World shepherds must share a mysterious secret and uncanny ability with their dogs. We'd read *Bob, Son of Battle*, about the old sheepdog, Red Wull, that becomes a terrible killer of sheep. And who can forget *Lassie Come-Home*, where two men wait to shoot the canine killer of their lambs and nearly get Lassie instead?

These stories are mirrored in real life. Especially in heavily populated areas of the United States, domestic dogs are the main miscreants, harassing and killing sheep and calves.

Sheepdogs, as we knew them, looked like predators. As biologists interested in the evolution of behavior we recognized the chase, the stalk and the grip that collies use to get sheep into a pen as the same behavioral sequence that coyotes use to kill them. Our view of sheepdogs at that time paralleled that of most laymen and other dilettantes in dogdom. Two nearly distinct types of sheepdogs are, commonly, muddled. Encyclopedias of dog breeds tend to lump together the world's livestock-associated dogs, calling them "sheepdogs" or "shepherds."

But we consulted *The Hamlyn Guide to Dogs* and found, under "Sheep-herding dogs," a subdivision into "mountain" and "shepherd" dogs. Several Old World breeds, including the Komondor, were identified as guardians and defenders of the herd. Colleagues advised us that in the south of Yugoslavia, near Tetovo, dogs known as the Shar Planinetz still guard and defend the flocks. We set out in search of such breeds.

Ray and our daughter Karyn logged more than 10,000 miles around the United States in our modified sled-dog/camper van, seeking out farms with sheep-guarding dogs. They saw one or two "successful" guardians, which gave us hope that this technique might have merit—especially when one of them got nipped by a suspicious Komondor. Next, we covered another 10,000 miles in Europe.

We saw cattle-driving dogs in Switzerland, truffle-hunting dogs in Italy and, finally, close to the Albanian border in southern Yugoslavia, the legendary Shar Planinetz. At first we saw only sheep, strung out for miles beside the highway, on their way to the high pastures in the Shar Planina Mountains for summer grazing. Shepherds on foot and horseback accompanied them. Among them—sheep-sized, sheep-colored, sheep-shaped—the dogs plodded along shoulder to shoulder with the flock.

These dogs looked and acted nothing like Red Wull or Lassie. They were heavyset, weighing about 80 pounds, with rounded heads, dropped ears and shaggy coats. No herding sheepdog ever appeared as much a part of the flock as did these guardians. We followed the migration up into the mountains, and were treated to pastoral scenes of hundreds of sheep grazing on the bright new grass of spring, watched over by one (usually reclining) shepherd. Two or three dogs loafed nearby, passive, unconcerned. Occasionally a dog would interact with a sheep, sniffing noses or tails, or sharing a patch of shade.

As long as the routine was unbroken, the dogs remained totally wrapped up in their own world. When, however, one intrepid biologist decided to see if he could "steal" a sheep, and slowly but steadily approached the flock, he found his way slowly but stead-

Maremma pup is lamb's companion; adult keeps behavior pattern of loose association with littermates.

In sheepdog trial in Maine, a Border Collie exhibits "eye" or stalking behavior; sheep become uneasy.

Another Border Collie goes from stalking to gripping —actually attacking throat of sheep it is herding.

On Coppinger farm, a sheep bolts away as a Shar attacks a Border Collie that it takes for a predator.

ily barred by one of the dogs. The message was clear.

In the evening, the sheep bedded down with the dogs. Yes, the shepherd told us, there are wolves, but the dogs are great fighters and can easily kill them. Although the dogs we saw carried few scars, their size and weight, coupled with their threatening attitude when pressed, left little doubt in our minds that these sheepdogs could hold their own against a wolf.

But how was it possible that a large member of the carnivorous, predatory canine family could be used to protect an easy prey animal against other carnivorous, predatory canines? Before we returned home late that summer, we saw more of these sedate sheepdogs, breeds developed in Italy, France, Hungary, Poland and Turkey. They looked strikingly alike, in spite of their geographic separation. They were large, placid, generally unresponsive, with domed heads and dropped ears. They did not chase sheep. Obviously, European shepherds had developed dogs that related to sheep in a way that was largely unknown in the United States.

Dogs that prefer sheep to people

We shipped eight pups home, four from Yugoslavia and four from Italy, and in Scotland, on the way back, managed to come up with six Border Collie pups the same age as the guardian pups. We had outlined a long-range project with a series of experiments to find out whether guardian dogs could protect the nation's sheep, and, if so, how?

As the Livestock Dog Project took shape at Hampshire College, all the dogs grew up together. By January 1978, the dogs were between eight and nine-and-a-half months old, and major differences were becoming established. The six collies were quick to respond to commands, the guardians much slower.

Another major difference that became obvious was the development in the collies of "eye." This behavior, described in a standard text as "the tendency to watch eagerly and to follow a moving object," is characteristic of Border Collies and other herding dogs. A biologist would call it stalking. One reason collies can move sheep so successfully is that the sheep recognize the behavior as a stalk and move away from it.

The guardians, although raised side by side with the collies and subjected to the same stimuli throughout their youth, never showed "eye" or anything even remotely resembling it. As they outgrew the collies in height and weight, they tended to slow down and to play only with one another. Unlike the collies, they demonstrated a remarkable inattention to anything we threw in playful solicitation. In fact, these dogs seemed to prefer sheep to people! They showed a definite "following instinct," a tendency to stick right with the flock, day and night, and almost to act as part of the flock.

By summer 1981 we were keeping records on 300 guarding dogs, most of them the offspring of the imported stock, and most of them placed with "cooperators" on farms and ranches from Alaska to Maine, from Texas to Montana.

There were success stories, but in the early months of the project each phone call seemed to bring a new problem. A sheep producer in southeastern Massachusetts, with one of the state's largest flocks (200 sheep), was understandably upset when his two Maremmas, Michael and Angelo, failed to stop an attack by two large dogs. Six panicked sheep were seriously torn up during the attack, but the two Maremmas had retreated to the center of the flock. Other reports came in of dogs not staying with the sheep, or of dogs chasing the sheep. Occasionally a guardian would inflict serious damage and a sheep would have to be destroyed. But patterns in the dogs' behavior began to emerge. Most of the problems could be classified according to the age of the dog—with the worst occurring during a dog's "teen-age" months. With judicious handling to keep it out of trouble, the dog would usually grow out of the timidity, confusion and destructive exuberance of youth.

Sometimes good behavior was misinterpreted by a cooperator. At a wool growers' meeting in Colorado we asked offhandedly how a dog was doing.

"Don't know," replied the cooperator. "Dog never seems to do anything . . . he just lies around and I never see him chase coyotes or anything."

"Have you lost any sheep?"

"Well, now," he replied, "one night we took the dog to the vet to get porcupine quills pulled out and the coyotes got three sheep while he was gone."

On Colorado's western slope, Tito (a Shar) and Dominik (a Maremma) guard 1,000 sheep. According to the cooperator, "They have paid for themselves many times over by chasing off coyotes . . . without them . . . we would have lost 100 head or more to coyotes. We lost only two to coyotes this year." Those 100 sheep are potentially worth about $10,000.

At one point, several beleaguered Western sheep producers invited us to bring some dogs to their thousand-ewe ranges for the summer and show them what the dogs could do. We lured a former student, Jay Lorenz, from his teaching post in Maine. With a dozen of the best dogs we headed west, looking for clues to help explain both good and bad behavior.

Raymond Coppinger, professor of biology, and Lorna Coppinger, faculty associate in biology, work at Hampshire College in Massachusetts, where they and colleagues run the New England Farm Center.

This white Anatolian Shepherd is one of the Old World breeds being tried out guarding U.S. flocks.

Shar Planinetz brought from Yugoslavia as pup is used for breeding, and helps rid local farms of predators.

The best clue, like all best clues, at first had us royally confused. On a mountain in Utah, Cruick, a Shar Planinetz, stuck right with a flock of 1,000 Rambouillet ewes and their lambs, surrounded by coyotes. She lost only four wandering sheep to coyotes all summer. Neighbors, without a guarding dog, reported losses almost every night. On a mesa in Colorado, however, several proven guardians did everything but guard their black-faced Suffolk crossbreeds. They hung out near our cabin, or spent the days with the shepherd's two horses, or they sometimes lolled about together in the shade.

One reason for this disparity in behavior, when we finally woke up to it, seemed embarrassingly obvious. The Rambouillets, of European origin, flocked together closely even while grazing. Cruick could see them all, hear them, walk among them, be part of the flock. The Suffolks, an English breed, didn't flock well. They grazed in twos and threes, spread out over dozens of acres. They were wild sheep, they spooked at the dogs' approach, and provided no cohesive band for a dog to interact with. The dogs need a basic, minimum mass of clustered sheep to focus on.

Sheep behavior, and the evolution of two types of sheepdogs, reflects local predation and philosophies of sheep management. English shepherds, for example, have not had to contend with large, numerous predators. They don't have guarding dogs. Southern European and Asian shepherds, on the other hand, have been bothered by wolves, lynx, bears and jackals. They have developed regionally distinct breeds of large guarding dogs. The list is long, and most are unfamiliar to Americans.

Besides predation, management systems have influenced the type of sheepdogs bred in different regions. On the moors of England, sheep scatter far and wide and graze most of the summer unattended. By fall the sheep are semiwild and spooky. The English like this nonflocking behavior, for it gives them better utilization of the whole range, with less damage to any one section. When it comes time to gather these sheep, the shepherd needs his fleet, obedient herding dogs. The shepherd stands to one side, directing the dogs with shrill whistles or shouts. Before long a mass of sheep finds itself heading for the barn, kept together and moving by the dogs stalking them from behind.

In Europe and Asia Minor, we saw why such herding dogs aren't needed. In isolated Turkish villages, the sheep live underneath the family's living space, or beside it. On the range, they flock together as they graze. Little need for a herding dog here. But predators must be warded off, and guarding dogs are needed.

Lack of herding dogs in the intimacy of the Old World management system is also attributable to the insistence of the shepherds that they don't like their sheep to run. The livestock become nervous, they say, and don't grow when being chased.

So from two types of livestock management have come two types of sheepdog. A guarding dog must be part of the flock, always following but never chasing. A guarding dog must defend the flock with its teeth if necessary, but never use its teeth on its charges. The

herding dog has to get the sheep to move—under control, of course. Perhaps it would be fairer to say that the sheep must move away from the herding dog but must not move away from the guardian. We can postulate that if a dog looks like a predator, then the sheep move away. Sheep may recognize predatory intention in any slinking animal with pricked ears. If, however, a dog looks and moves like another sheep, they tend to flock with it.

Herein lies an intriguing evolutionary story. What struck us for the first time was a match between the quality of an animal's behavior and its shape, which inspired us to formulate a new hypothesis on the evolution of dogs. As evolutionary biologists, we tend to view behavior as being determined and limited by structure: wings fly, feet walk.

What is most important to remember, however, is that genes don't *directly* control behavior. Behaviors are predisposed by anatomy. Anatomy has its basis in the genes, and thus all behavior has a genetic base. That genetic base can be selected. Biologists, and dog breeders, have known this, at least intuitively, for a long time.

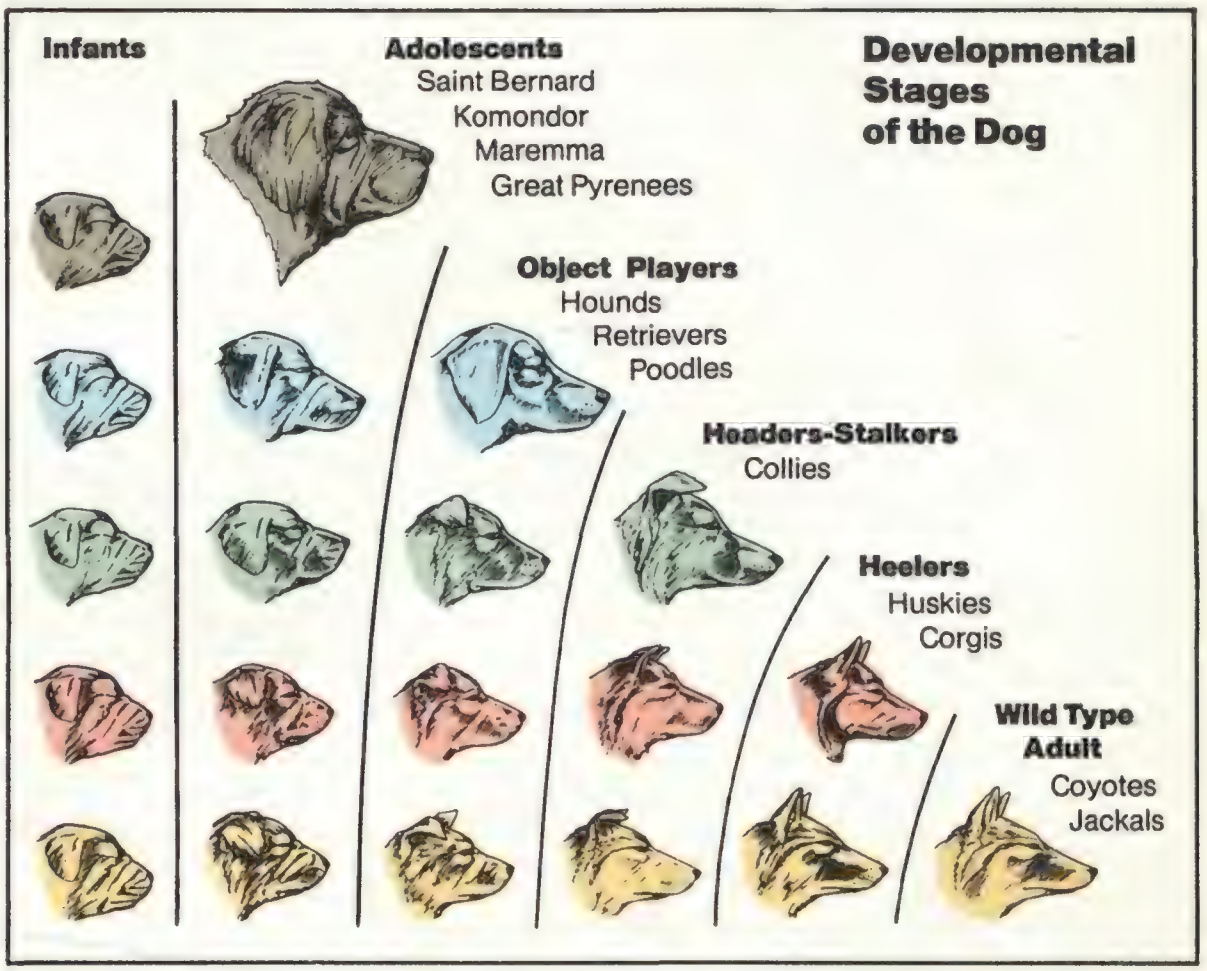
Guarding dogs have to stay with the sheep all the time, and protect them. They cannot look or act like predators. To explain how this might have happened, let's look at the process of the dog's evolution from its wild ancestor.

Animals of the genus *Canis* have similar developments. They are born with their eyes closed, ears against the head, and almost indistinguishable puppy shapes. When they are born they are blind, deaf and unable to smell; however, they do have elaborate sucking musculature around the mouth and tactile senses which help them find the teat and keep them in contact with the litter when mom is gone. They therefore have the shape and behaviors that adapt them well to the "den" environment.

Over the next year or two these puppies become adults. But after leaving the infant stage and before reaching maturity, they enter the juvenile, or metamorphic, period, during which they change from a shape adapted to survival in the litter to one for survival in the adult environment. The metamorphic period is really one of continuous change but we'd like for our purposes to divide it into four distinct stages (see the chart below).

The first stage is characterized by sitting outside the den and loosening the tactile contact between littermates and mother. Food is mainly obtained by licking the mother's face, getting her to regurgitate, and some fighting over the spoils. Pups are wary of novelty and the slightest stimulus will cause them to scurry for the den, yelping, or in our observations sometimes to crouch, snarl and bite in fear.

In the second stage, pups begin to play with objects. At first the object may be a sibling or a parental tail, then later, a stick, a leaf or a bug. As this stage con-



The authors believe the many breeds of domesticated dogs are derived from their common ancestral wild type by a process of neoteny—retarding development at some juvenile stage—as illustrated in this chart. Each horizontal row of heads represents life stages of one type, from infant to adult. Bottom row depicts the wild type; each row above is successively shorter, showing where development is arrested. Thus, guarding dogs are arrested adolescents, keeping their early juvenile form and behavior as adults. Other breeds acquire their distinctive shapes and behaviors as they reach adulthood with traits of later juvenile stages: object players, stalkers or heelers.

tinues, the pups spend a greater amount of time playing with various objects.

In the third stage, pups add a new motor pattern, that of "stalking." They lie in wait and pounce on siblings or even motionless objects. Sometimes the object is imaginary, or a pup will scratch a leaf or stick into motion and then pounce on it with a stiff-legged jump similar to that observed in coyotes and wolves. Later during this stage, motion can stimulate this behavior; a short chase can ensue to cut off the motion, a behavior known as "heading."

In the fourth stage, pups start following a parent and may even participate in a hunt. During the hunt they begin to focus on the heels, if the prey is large, a behavior known as "heeling." When all the behaviors from the four stages are put together with learning, the "wild type" can hunt successfully.

Domestic dogs have the anatomy of a juvenile wild type. They start to grow just like their wild ancestors but their development is retarded. This evolutionary process is called "neoteny," and simply means that the adult dog looks more like its ancestor's juvenile form than its ancestor's adult form.

Now for an important leap. If the domestic dog looks like its ancestor's juvenile, then it should also act like its ancestor's juvenile, for we have already made the argument that the anatomy of an animal determines the limits of its behavior.

But which juvenile stage does it act like? We've described at least four of them. Well, suppose that different breeds of dogs have been retarded in different juvenile stages. The cattle-driving dogs or heelers such as the Welsh Corgi or Australian Blue Heeler have pricked ears and long, pointed noses. This group also includes the reindeer-herding Samoyeds and the rest of the spitz types. They are fourth-stage dogs, closest in appearance to the wild type.

The third stage is represented by the heading dogs, the collies that run to head off whatever is running from them. These dogs have higher crowned heads than the heelers, and ears that are for the most part halfway between pricked and dropped—"tulip" ears.

Most of our pet dogs fall into the second stage. They are flop-eared, broad-headed object players which chase sticks or balls with great delight. The hounds, retrievers and spaniels are all in this group. A retriever should not be described as a hunting dog but rather as an object-play dog. One teaches it to retrieve ducks by getting it to fetch a thrown stick, then a thrown canvas dummy soaked in duck scent, and then a shot duck lying ahead in the water. The dog will retrieve any object. It just has to be taught which object we will reward it for playing with.

These breeds, "stuck" in the object-play stage, tend to exhibit more juvenile submissiveness than do the heading sheepdogs, and the sheepdogs are more submissive than the heeling cattle dogs or huskies. Object-play dogs don't have that stalking or heeling behavior, which makes them much more pleasant to take for a walk. They aren't inveterate car-chasers and they show more dependency behavior, which means they stay closer to home and are more easily trained than dogs farther along in the maturation process.

An 80-pound snapping "puppy"

Where do livestock-guarding dogs come in? Why is it they stay with sheep all day and night and protect them from predators? Because they are large-volumed, puppy-shaped, first-stage dogs. They play with each other but ignore sticks or balls. They lick sheep faces in food-begging gestures. They even look like big puppies, with their short muzzles and rounded heads, their ears dropped and close to the head. Their attention to sheep is the response of a puppy in loose association with its litter.

The apparent aggressiveness of guarding dogs is derived from that first-stage adverse reaction to novelty and change. It begins with fear-biting and is reinforced as other animals, including humans, react to the panic of a large, 80-pound snapping "puppy."

When a wolf or other predator arrives at the flock, it is faced with a huge adolescent displaying a confusing mixture of behaviors. The dog leaves the sheep in a gesture of dominance over the wolf and then moves back, retreating with tail down and a yelping bark. Hesitation on the wolf's part is greeted by a grimace or a short attacking snarl, continued barking, and a pacing forward and back between the novel stimulus and the "safety" of the flock.

Most predators won't get a clear signal as to what the conflict is about, and if they are outsized or out-

numbered they will probably just leave. Or else they become absorbed in the conflict, and the dog rather than the sheep becomes the object of their attention. In Europe, the armed shepherd puts a stop to the confrontation, again reinforcing the dog's behavior.

These four stages of juvenile development are not distinct, but continuous. All breeds are not stuck in the middle of a particular hypothetical stage. Pointers, for example, are late object players in the early part of the stalk. They can learn which object (*e.g.*, a bird) you want them to play with, but when they find it, they start to stalk, which is called "pointing."

Also, it is the frequency of the occurrence of any behavior by any individual dog that determines where that dog is along the developmental line. The stalkers still object-play, but much less frequently, and often in combination with heading.

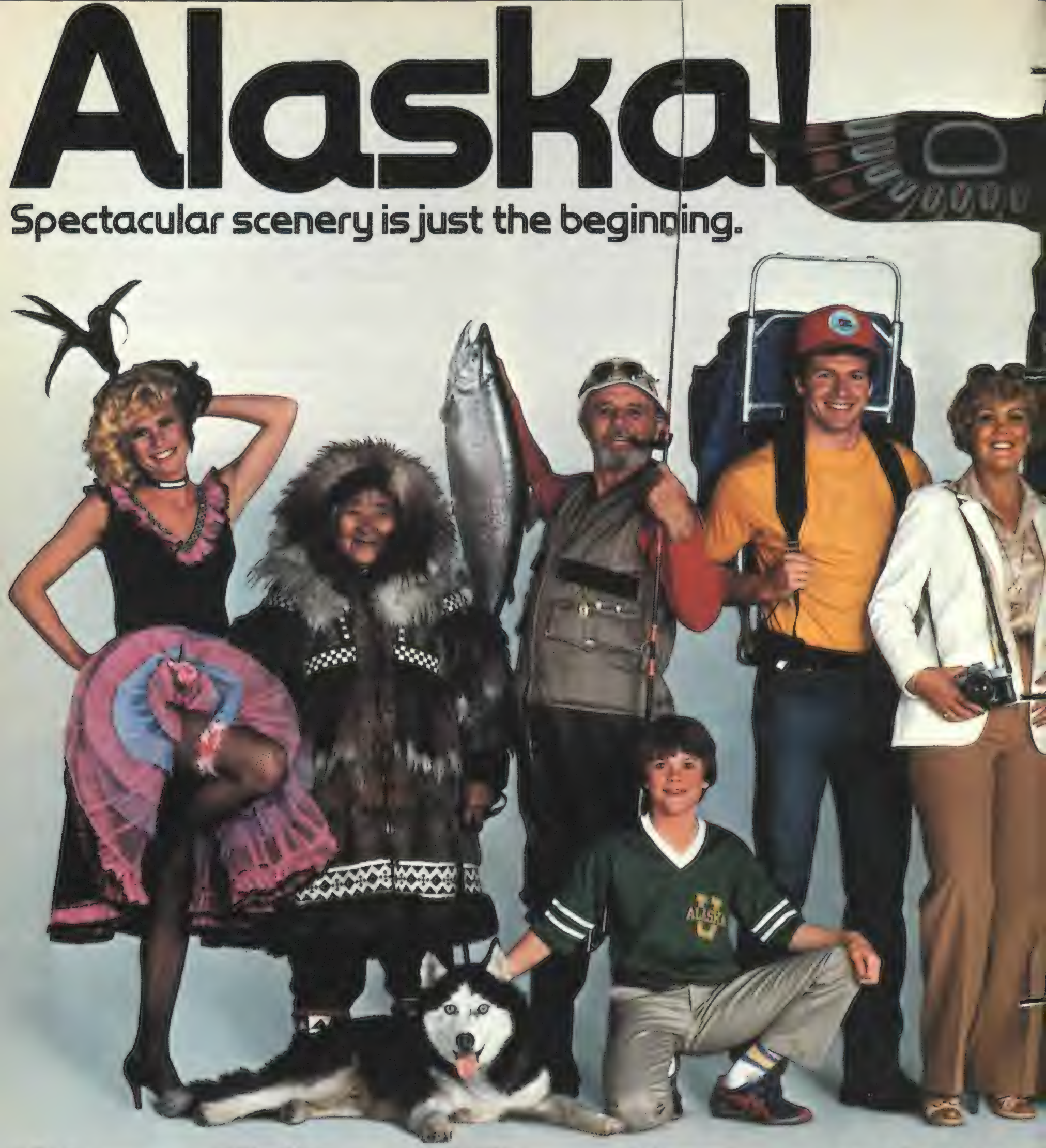
Neoteny, then, classically a term describing the structure of an animal, is in our view equally descriptive of behavioral evolution. Obviously, the shapes and sizes that the European shepherds and all other dog breeders select for are in fact manifestations of a set of behaviors that accompany a particular chronological or developmental age of a dog. We can often predict a dog's behavior by its shape and are working on a system for breeding dogs which will have the appropriate package of guarding behaviors. Even more important, we should be able to select for guarding dogs for different kinds of farms. Small farms with small predators don't need the large European guardian. The smaller the dog that can do the job, the less the liability in terms of a misdirected bite. Breeding for puppy-shaped adults of any size should be relatively easy.

Looking at this form of evolution, we find something else exciting. The genes that are being selected are those that affect rate of development and thus determine the stage at which that development is retarded. In a relatively short period of time, perhaps as little as 10,000 years, the dog has adopted many shapes. Breeders continue to change these shapes and behaviors by speeding up or slowing down (retarding) the developmental rate. This insight gives us confidence that we can develop the right guarding dogs with the right behaviors for different types of farms. That's the next project.

For Noodles, Komondor guarding flock on O'Toole family ranch in Baggs, Wyoming, it's a sheep's life.

Alaska!

Spectacular scenery is just the beginning.



GOLD Alaska loves its gold rush history. Today its towns still teem with high-kicking, knee-slapping frontier-style fun: can can dancers, free-spirited saloons, riverboat paddlewheelers, comic opera, and even a narrow gauge railway.

ESKIMOS The unique nature of Arctic Alaska has produced a people with inner strength and captivating warmth. Their sensitive artwork, inviting hospitality, and fascinating culture are a part of Alaska you're not likely to forget.

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SNOW Untracked powder on mountain slopes, snowy meadows and bustling Alpine ski resorts. These are the Alaskan arenas of winter and spring downhill and cross-country skiing. And for the ultimate skiing experience— shooshing down otherwise inaccessible glaciers — helicopter lifts are available year round.

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FESTIVALS Russia ruled Alaska until 1867. Later, Scandinavian immigrants founded many of the first towns and villages. You can see Russian folkdances, onion-domed churches, and take part in a "Little Norway" spring festival.

SOURDOUGH Pioneer spunk, a tough yet gregarious spirit, and a pot of sourdough were all Alaskan prospectors needed in 1898. And so they became known as Sourdoughs. Their stories and mouthwatering recipes are still a very real part of Alaska.

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By Rudolph Chelminski

Did Napoleon die at the hands of a secret assassin?

Yes, say two controversial amateur historians who call upon dead witnesses and use hair, neutrons and intuition to expose villain's plot

Toxicologist Hamilton Smith dissolved irradiated bits of Napoleon's hair for test to confirm arsenic.

"The Emperor sighed, and one doctor, his eyes on his watch, counted the time until he would sigh again. Fifteen seconds passed, then thirty, then a minute. The Emperor's eyes opened suddenly, and another doctor . . . immediately closed them. The eyes rolled up under the lids. The pulse disappeared. It was eleven minutes before six. Napoleon was no more."

So begins *The Murder of Napoleon,* a new book destined to intensify the Napoleonic war of words being waged between French historians, who maintain the Emperor died of natural causes, and a pair of history buffs—Sten Forshufvud in Sweden and Ben Weider in Canada—who insist that he died the victim of a poisoning plot. What's more, Forshufvud (p. 79) claims to have scientifically identified the murderer.

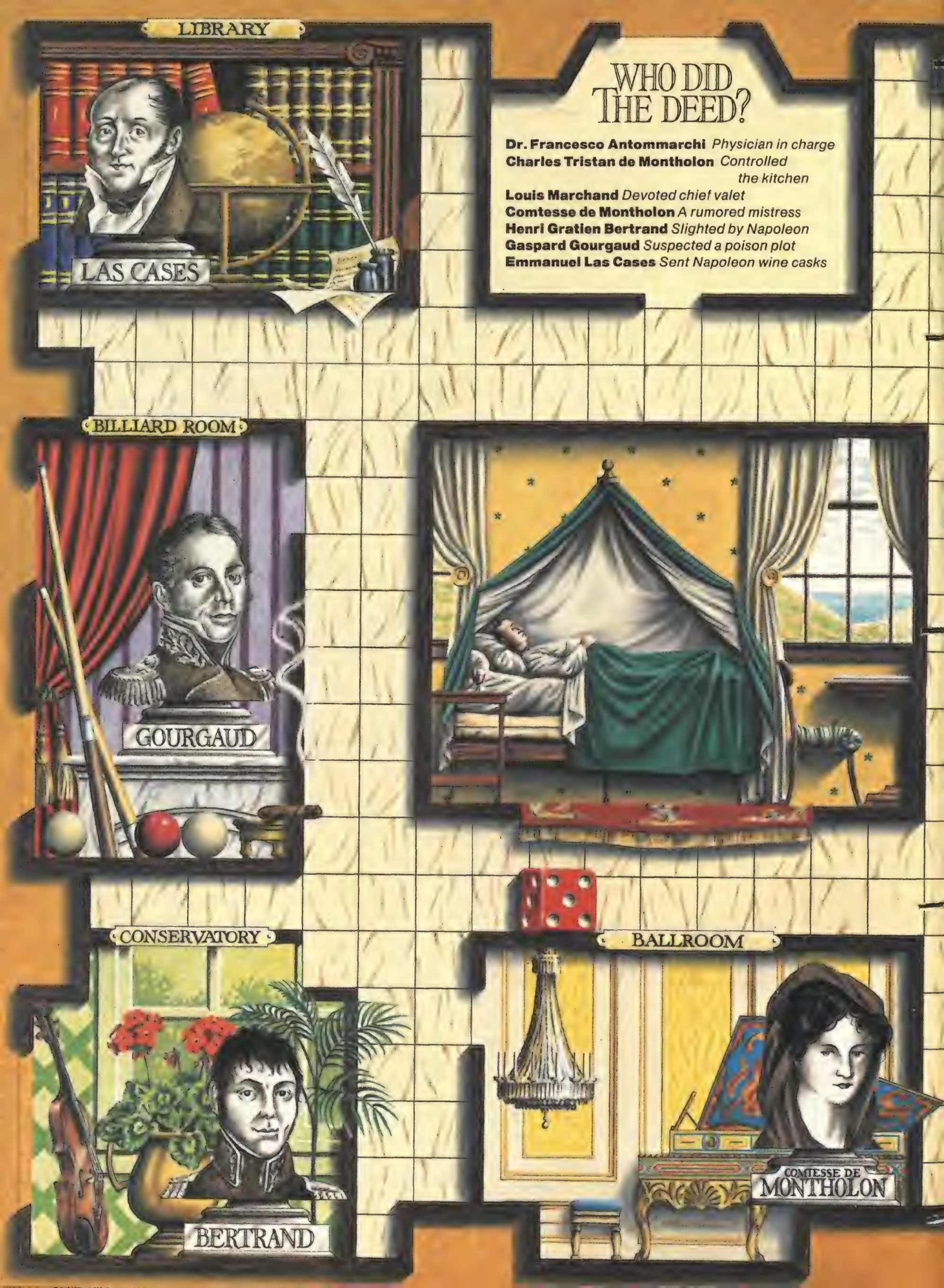
"Absurd!" scoffs Jean Tulard, a professor at the Sorbonne and president of L'Institut Napoléon in Paris. "It makes no sense. It's just a detective story. An invention. No one in France will support this thesis."

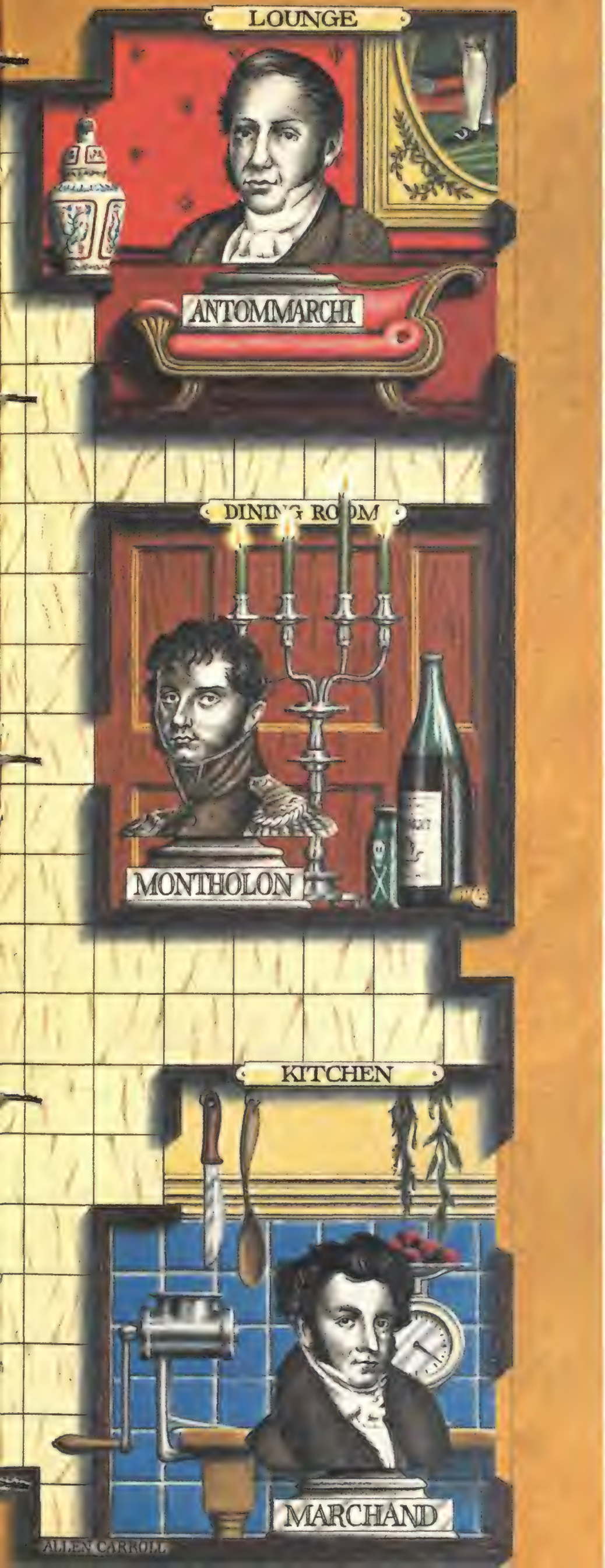
Nevertheless, with *The Murder of Napoleon,* author Weider, president of the Napoleonic Society of Canada, and coauthor David Hapgood make a case for the validity of Forshufvud's clues to the alleged assassination, discovered while studying the memoirs of members of the Emperor's entourage (pp. 78-79) during the years of exile on the British island of St. Helena. In 1955, as Forshufvud was reading the intimate records of Louis Marchand, Napoleon's chief valet and constant companion, a flash of intuition signaled "arsenic" to him. A keystone of his theory was later confirmed by Hamilton Smith (above), a respected specialist in forensic medicine at the University of Glasgow, who proved that the Emperor had indeed been subjected to chronic arsenic intoxication.

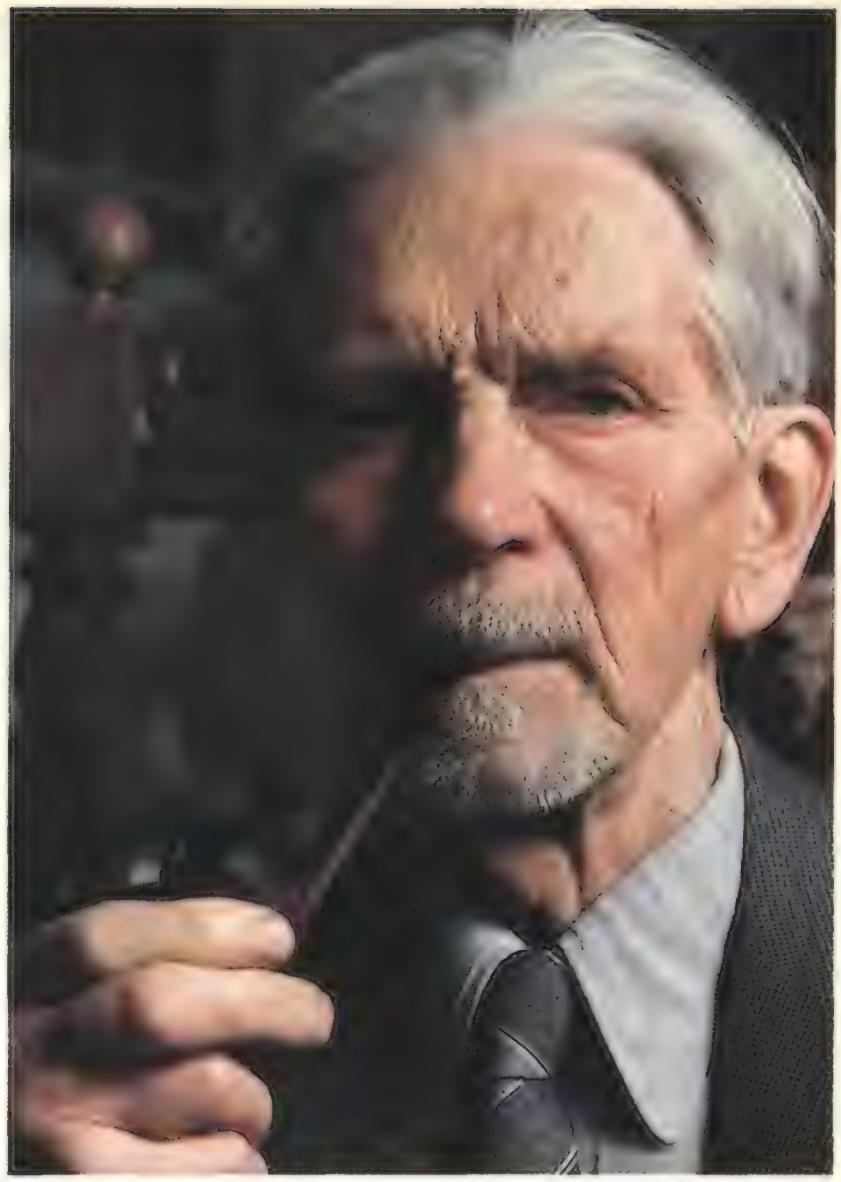
Dentist by day and amateur sleuth by night, Forshufvud inherited his fascination with Napoleon from his father, and over the years his extensive reading had included the memoirs of the mixed bag of officers who sailed into exile with their general in the summer of 1815:

- Emmanuel Las Cases, a conceited aristocrat and writer who joined Napoleon only shortly before the journey to St. Helena in hopes of becoming his historian. When Las Cases left the island in late 1816, he shipped back to St. Helena a large supply of Napoleon's favorite wine in casks that were kept for the Emperor's exclusive use.
- Charles Tristan de Montholon, a count of the

Napoleon, here in a detail from Horace Vernet's deathbed portrait, feared that he would be murdered.


LIBRARY
LAS CASES
WHO DID THE DEED?
Dr. Francesco Antommarchi Physician in charge
Charles Tristan de Montholon Controlled the kitchen
Louis Marchand Devoted chief valet
Comtesse de Montholon A rumored mistress
Henri Gratien Bertrand Slighted by Napoleon
Gaspard Gourgaud Suspected a poison plot
Emmanuel Las Cases Sent Napoleon wine casks
BILLIARD ROOM
GOURGAUD
CONSERVATORY
BERTRAND
BALLROOM
COMTESSE DE MONTHOLON





Sten Forshufvud got inspiration for "poison" theory from eyewitness accounts of Napoleon's last years.

French aristocracy who served under the Bourbons during Napoleon's first exile on Elba in 1814-15. On St. Helena, the Emperor inexplicably favored Montholon, put him in charge of the household (including food and wine) and named him principal executor of his will. Montholon's wife Albine apparently became Napoleon's mistress—with her husband's consent.

• Gaspard Gourgaud, an artillery officer, who disliked the Montholons and whose diaries disclosed that Albine had in her possession a book about an infamous French murderess (her weapon was arsenic), the Marquise de Brinvilliers. Gourgaud expressed fear of poison to Napoleon and warned him of a strange taste to the Emperor's wine, urging him not to be the only one to drink it. His cautions were ignored.

• Henri Gratien Bertrand, former grand marshal of Napoleon's palace at the Tuileries, who grew jealous of the Emperor's favoritism toward Montholon and whose wife begged him to return home at any cost.

Forshufvud had also studied the account of Napoleon's death written by the Emperor's personal physician, Dr. Francesco Antommarchi. The Corsican pathologist ultimately blamed the climate—therefore the English "jailers"—for his patient's demise.

Along with his addiction to Napoleon, Forshufvud

had a second hobby, the one that set him at odds with the French historians: toxicology. It was his knowledge in this arcane but anecdote-rich field, coupled with investigations in his laboratory, that prepared him for the "poison" insight that seized him as he read Louis Marchand's memoirs. When his master's health began deteriorating rapidly in the early months of 1821, Marchand assumed all the chores of the sickroom: bathing the patient, changing sheets, administering the various—and largely useless—medicaments and purges in fashion those days. His record of experiences at the Emperor's side therefore presented a host of clinical details and observations that were missing in the other memoirs.

As Forshufvud devoured the text, he began to see familiar patterns and consonances that until then had eluded him. "I recognized arsenic right away. It was unmistakable. I told my wife, 'Napoleon was poisoned—it's quite clear. Why has no one already seen it?' "

He found no fewer than 22 of some 30 generally accepted symptoms of chronic arsenic poisoning. The modus operandi, he detected, was a slow and carefully planned campaign of intoxication over the years, causing a general weakening of the body which medical science of the time was unable to pinpoint beyond "digestive troubles" or "*maladie de langueur*" (wasting illness), caused most likely by the climate.

Forshufvud knew that arsenic—"inheritance powder," as it was wryly called—had long been a favored criminal device in France, gaining notoriety in the late 17th century when a poisoning scandal swept Paris. For years French schoolchildren shuddered with nervous delight at the name of the Marquise de Brinvilliers, through whom the scandal erupted (and subject of the book read by Comtesse de Montholon on St. Helena). She murdered her father, her two brothers and numerous hospital patients with her home research in applied arsenic.

Collecting more clues from his studies, in a scientific journal Forshufvud came across an article describing a new way to analyze hair for the presence of arsenic, a method devised by toxicologist Hamilton Smith in Glasgow. Unlike the old chemical analyses that took large amounts of hair, Smith's technique was based on neutron bombardment and worked on a single strand. It was ideally suited for detecting the arsenic that makes its way into a poison victim's hair and nails. The test as described in *The Murder of Napoleon*: "The hair sample and a standard arsenic solution were both irradiated by thermal neutrons for twenty-four hours. The comparison between the two samples then showed the arsenic content of the hair, and from that figure the amount of arsenic in the body could be calculated."

Musée de Malmaison, Paris

Napoleon stands in doorway of Longwood House, his home on St. Helena, in painting by valet Marchand.

Edema was just one symptom of arsenic poisoning Emperor developed during exile. Successive drawings show him chunky in 1815 on English ship headed for St. Helena, but paunchy by 1817, bloated in 1820.

Smith soon refined his method to the point where he could analyze the hair in sections, thus measuring not only the overall arsenic content but the varying levels of intoxication, rising or falling in direct reflection of the body's level of ingestion. Since it is a constant that human hair grows at about half an inch a month, it was possible to use data to approximate, from a given hair, the poisoning dates. Forshufvud was ecstatic. With a hair taken near the time of Napoleon's death, he should be able to prove his theory irrefutably. He set about looking for strands from the imperial head.

Strange as it seems today, this task was far from impossible. Even during his lifetime, the Emperor had been a cult figure and his hair clippings a popular souvenir. Dozens of the reddish-brown or dark-blond locks, as fine and delicate as baby's hair, had been squirreled away by his admirers; some of these were surely passed down to succeeding generations.

Between 1960 and 1970 Forshufvud managed to acquire strands from six authenticated locks of Napoleon's hair, shorn at documentable dates during the exile, and sent them to Smith. Without exception they showed levels of arsenic well above normal for the early 19th century, ranging from a low of 1.06 parts per million (ppm) to a high of 76.6. (Hair's normal arsenic content for the period—from water, air, food, cosmetics—is difficult to estimate. Smith places it at about .5 ppm, while Henri Griffon, former head of the police toxicology laboratory in Paris, puts it near .3 ppm.) Even more compelling, the peaks and valleys of graphs made from Smith's tests coincided perfectly with the Emperor's continual changes in health—sick, well, sick, well—described in the various memoirs.

This was the corroboration that Forshufvud had expected, a demonstration of the devastating efficiency of arsenic administered in small doses over a long period. Never was Napoleon so floored by a massive dose that foul play might be suspected, yet with his recoveries and relapses into baffling complications, he went slowly, ineluctably downhill toward the tomb.

In good periods he seemed positively jolly, even though clearly bloated (above). Occasional horseback sorties from his quarters at Longwood House (opposite) struck British islanders as advertisements of his well-being and the benefits of the French way of life. Only six months before his death, during a brief surge of energy, the Emperor rode his horse several miles to Sandy Bay, where he dropped in at the home of Sir William Doveton, a leading citizen. Remarking the French party's picnic provisions of "cold pie, potted meat, cold turkey, curried fowl, ham or pork, I could not tell which; coffee, dates, almonds, oranges, and a very fine salad," Doveton noted that "from every appearance but his pale color, General Bonaparte was in good health . . . as fat and round as a China pig."

An unaccountable gain of weight (actually edema) is a typical symptom of arsenic poisoning, Forshufvud explains, pointedly adding that the effect of cancer, the cause of death most commonly accepted by Napo-

The author, who lives near Paris, based this article on The Murder of Napoleon *by Ben Weider and David Hapgood, a book just published by Congdon & Lattès.*

leonic traditionalists, is exactly the opposite. Doveton's optimistic observations were illusory: Napoleon's strength quickly ebbed and he finished the trip home in a carriage. A few days later he fainted as he stepped from his bath, and the strange symptoms that had been plaguing him returned: heart palpitations, weak pulse, pain in the legs, shoulders and back, persistent thirst, dry cough, loosened teeth, coated tongue, yellowed skin, rashes, chills, deafness, hypersensitivity to light, difficulty in breathing, recurrent nausea. All classic signs of chronic arsenic poisoning.

To strengthen his case while building a clearer image of the course of the Emperor's decline, Forshufvud laid out on the floor of his study a chronological presentation of Napoleon's symptoms during the final seven months. Taped together in a "time line" (at right), the discomforts faithfully paralleled ups and downs in Smith's hair analyses. The worst symptoms occurred in clusters, each cluster coinciding with another dose of arsenic. In all, he deduced six episodes of acute poisoning, none strong enough to kill. The victim was being prepared for the murderer's coup de grace.

The most diabolical part of the scheme now occurred to Forshufvud: an expert poisoner would have known that repeated doses of arsenic would wreak such havoc with the Emperor's innards that sooner or later the attending doctors would prescribe early 19th-century state-of-the-art medication. *And that that medication would kill him.* Medical theory of the day held that a sickly body often could be cured by removing the noxious elements inhabiting it. Hence great attention was paid to regular bowel movements, with correspondingly great use of purges—emetics and cathartics. Constipation (arsenic induced?) was one of Napoleon's worst problems in those last days.

By April 1821, the Emperor's stomach was so dyspeptic that he was reduced to a liquid diet (including

From the time line of Napoleon's last weeks

January 27, 1821 (Dr. Antommarchi's memoirs) The night was very bad. The Emperor is extremely weak, his pulse is weak, somewhat nervous—dry cough—somber expression.
January 28 Extreme weakness; eyes livid, almost sightless. Dry, nervous cough. Mouth dry. Thirst. Feeling of pain in the stomach.
January 29 Same condition. Profound sadness.
January 30 The Emperor is in a deplorable state; but the illness only increases his aversion to drugs.
Sten Forshufvud's comment: *The sectional analysis of the hair cut at death shows a peak of arsenic content at this period.*

February 26 (Antommarchi) The Emperor, who was feeling fairly well on the 21st, has a sudden relapse. Dry cough. Vomiting. Sensation of heat in intestines. Generally disturbed. Discomfort. Burning feeling that is almost unbearable, accompanied by burning thirst.
February 27 The Emperor is worse yet than yesterday. The cough has become more violent, and the painful nausea did not stop till seven in the morning.
Forshufvud: *The analysis of the hair shows another peak of arsenic content at this period.*

March 17 (Louis Marchand's memoirs) The Emperor took a little aspic I served him . . . and went out leaning on the arm of Comte de Montholon. When he arrived at the carriage, he could not step up into it and went back to his room with a glacial chill and shivering throughout his body, and went to bed. I put a second blanket over him while [servants] heated towels in which I wrapped his feet, changing them frequently. "You're bringing me back to life," he said. "I think a crisis is coming, it will save me or kill me."
Forshufvud: *The icy chill is a symptom of arsenic poisoning.*

May 4 (Marchand) About ten P.M., he seems drowsy beneath his mosquito net, which has been lowered. By his bedside, I watch his slightest movements, while the two doctors, Comte de Montholon, and the Grand Marshal [Bertrand] speak softly to each other by the fireplace. The Emperor makes an effort to vomit, I immediately lift the mosquito net to hold out a small silver basin in which he throws up some blackish substance, after which his head falls back on the pillow.
Forshufvud: *Again, the blackish color is characteristic of bleeding plus the metallic mercury. Napoleon's stomach is trying to save the body, but it is far too late: the poison has done its work.*

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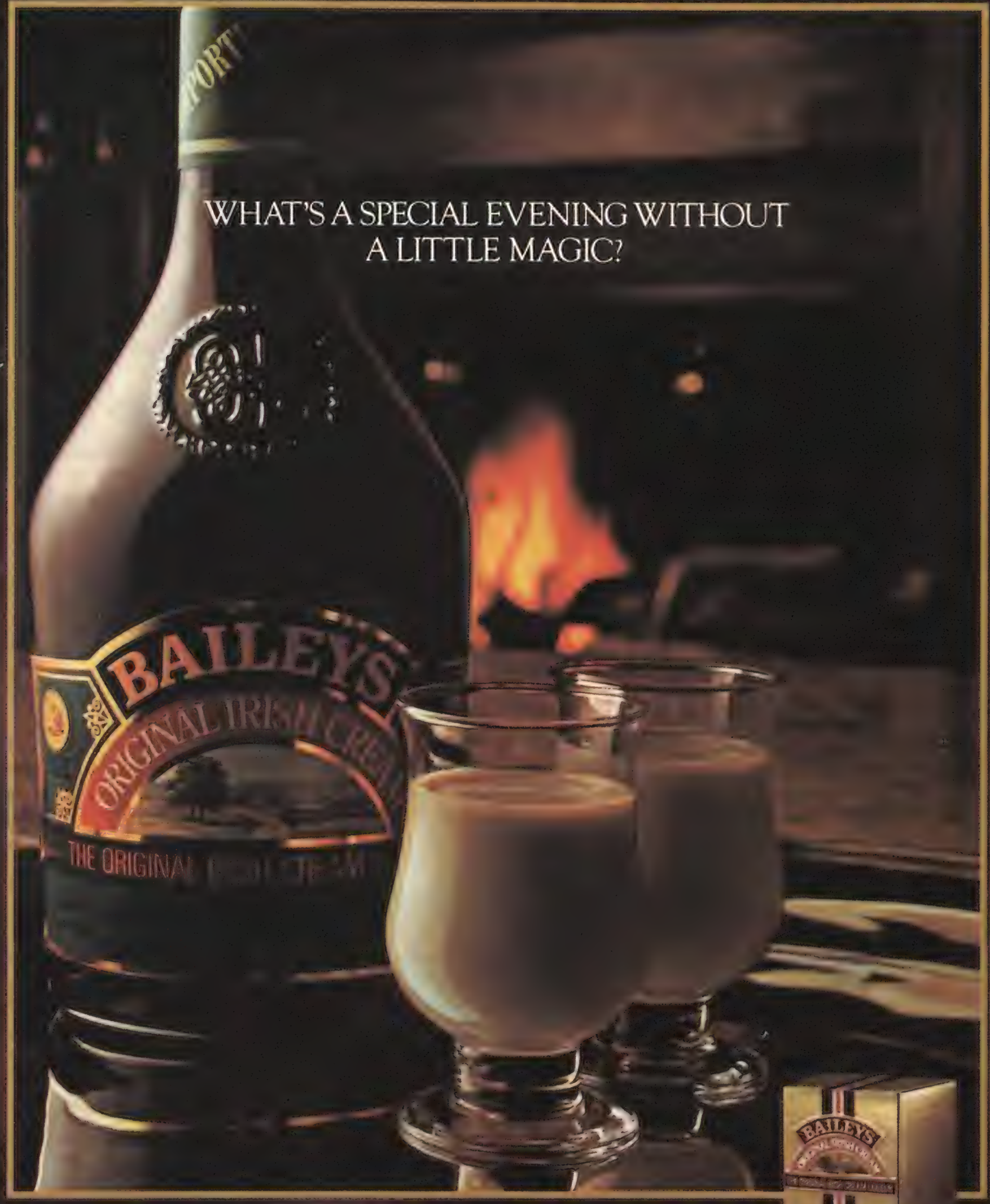

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his favorite wine and orgeat—a barley-based drink flavored with sweet almonds) broken by occasional solid food that his body soon rejected. A tartar emetic —which is a salt of antimony—administered in good faith by the trusted Dr. Antommarchi, only weakened him further by corroding the mucous lining of his stomach. Standard treatment, just as it had been when the Marquise de Brinvilliers dispatched her father with a glass of wine laced with antimony, the tartar emetic was a horrible error and Step One in Forshufvud's hypothetical coup de grâce.

Step Two was the addition of bitter (along with sweet) almonds to the orgeat at Napoleon's bedside. True orgeat, everyone knew, was made this way and Montholon had just received a case of bitter almonds from the governor of St. Helena (not an act of British perfidy; Montholon requested the nuts). The orgeat by itself was harmless, but if mixed with the cathartic calomel, as we shall see, it would become deadly.

Calomel was in fact Step Three, what Forshufvud calls the "death warrant." Calomel, which contains inert mercury, was a universal panacea used to relieve constipation. Like orgeat, it was harmless by itself but when mixed with the hydrocyanic acid in bitter almonds (now an ingredient of Napoleon's orgeat) it formed lethal mercurous cyanide. The poisoner, Forshufvud maintains, knew that sooner or later calomel would be prescribed.

The perilous prescription

Sure enough, on May 3, two English doctors sent by the governor as consultants became alarmed that the patient had gone for three days without a bowel movement. They ordered a purgative of ten grains of calomel. Montholon, too, thought it the right step. *Only* Dr. Antommarchi disagreed—violently—but he was outvoted and the calomel administered. A normal prescription would have been two grains spread among several doses. Forshufvud insists that ten grains was nothing short of insanity. The Emperor's stomach, weakened and corroded by the earlier medications, was unable to defend itself against the mercurous cyanide. He was doomed.

On May 6, Dr. Antommarchi performed the autopsy that Napoleon had ordered ("I die prematurely, murdered by the English oligarchy and its hired assassin," he thundered in his will). Present were six English military doctors. They found an ulcer in the stomach next to the pylorus. Antommarchi called it "cancerous"; for the others it was a matter of "scirrhous portions advancing to cancer." Today most historians say "cancer" or "ulcer" when they evoke Napoleon's death. But as Forshufvud is quick to point out: "This is a case more for pathologists and toxicologists, not historians. I have never heard of any objections to my thesis from experts in forensic medicine."

Quite so. Henri Griffon has observed that "all the elements of the dossier do seem to point toward the possibility of poisoning." Both he and Hamilton Smith speak with respect of Forshufvud's detective work, albeit cautioning that "until further proof is adduced it must remain only a hypothesis." "But he spent a great deal of his own lolly on this investigation," adds Smith with impeccable Scottish logic, "which makes anyone serious, I would say."

Running the French blockade

Forshufvud's theories have won few converts among French Napoleonic scholars, who react to his findings with passionate intensity. Forshufvud has his own explanation for the response of what he calls the "French blockade." "Scholars always have an intellectual edifice," Forshufvud shrugs, "and the edifice reposes on a cornerstone of fundamental dogma that you're not allowed to touch because if you take away the cornerstone, the whole beautiful edifice tumbles down. That's how it is with my poison thesis. It is only because of pride that the French reject it." His explanation of the emotionalism that creeps into the debate is Anglophobia. An ancient mistrust and misunderstanding, far more formidable than the English Channel, stands as a prickly barrier between these two peoples. Not only did perfidious Albion beat France's greatest hero at Waterloo and spirit him away to a distant rock, but it finally broke his spirit and sent him to an early grave. This is the view of the Frenchman in the street.

Wrong, responds Forshufvud, all wrong. The view from Sweden, where French nationalism is nil, leads him to precisely the opposite conclusion: the *English* wanted Napoleon *alive* and the *French* wanted him dead—the French ruling circles, at any rate. "For the English, Napoleon was a precious hostage. Remember that England and France had always been at war. With Napoleon safe and sound under British guard at St. Helena, the Bourbons' hands were tied. They were well aware of Napoleon's huge popularity among their own people, and they knew that the English could always bring him back. So he represented a permanent threat. It was in England's interest to keep him alive as long as possible." Nor was it in anyone's interest simply to execute the Emperor. Instead, terminate him slowly, make it appear natural and put the blame on the English.

Now Detective Forshufvud is at the point of unmasking the villain. He immediately eliminates everyone who did not live at Longwood full time (that clears the English and Bertrand, who was housed

nearby with his wife); those who were not present for the entire exile since the poisoning began early and was continuous (Las Cases, Gourgaud and Antommarchi are excused); and those who did not have constant personal access to the victim (he alone was targeted; others who ate the same food did not suffer, so there go the cook and servants, who could have poisoned only Napoleon's entire inner circle).

That leaves just two men: Marchand and Montholon. It would be almost impossible to assign regicidal tendencies to the devoted Marchand, who had spent his entire adult life in the service of his master. But Montholon was another matter. Aristocrat, courtier, coward, likely cuckold, he had led a strange and unpredictable life—now a royalist, now a Bonapartist—fabricating titles for himself, inventing wounds he never received, participating in battles only on paper. He was apparently a thief as well, having been charged with the purloining of 6,000 francs intended for soldiers under his command. Forshufvud claims that only through the fateful intervention of the Bourbon Comte d'Artois (France's future Charles X) did Montholon escape punishment more severe than being banished from court.

This, then, was the man who threw himself at Napoleon on the eve of the exile. A notorious lover of luxury appeared ready to sacrifice the best years of his and his wife's lives vegetating in the middle of the South Atlantic Ocean. But was he? Not at all, insists Forshufvud: Montholon owed his benefactor Comte d'Artois a favor and was sent to St. Helena for the express purpose of poisoning Napoleon—slowly—to death. It is the only explanation that fits. Unlike the others who accompanied the Emperor, Montholon was a relative unknown, but once installed at Longwood he put his courtier's skills to work in eliminating everyone but himself from Napoleon's affections. It is even possible that he encouraged his wife to enter the Emperor's bed. On May 5, 1821, he completed his mission: "Napoleon was no more." Montholon set sail for home a rich man—had not the Emperor bequeathed him two million gold francs, the largest sum to any of his followers?—thoroughly in the good graces of the House of Bourbon.

That, at least, is the theory of *The Murder of Napoleon*. For skeptics, Forshufvud has an extra card up his sleeve: in 1840, Napoleon's remains were returned to Paris where they lie at Les Invalides, encased in six nested coffins within a sarcophagus of red porphyry. At the exhumation on St. Helena 19 years after burial, the honor guard assigned to bring the Emperor back expected to find a skeleton. To their great surprise, the unembalmed body was excellently preserved (below). It struck them as a miracle, but for Sten Forshufvud it is only one more indication that he is right: arsenic can preserve living tissues. He predicts that if French authorities opened the Emperor's tomb today, they would see for themselves how well it works.

In 1840, the exhumers of Napoleon's body find it mysteriously well preserved—by arsenic?

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By Richard Wolkomir

Weathermen's lab is a Rocky Mountain high

With balloons, satellites—even a Korean War plane—scientists at National Center for Atmospheric Research scan Earth's envelope

NCAR Mesa Laboratory, overlooking Boulder, was designed by I. M. Pei to harmonize with the land.

Does the flap of a butterfly's wings in Brazil set off a tornado in Texas? A meteorologist once posed this whimsical question in order to illustrate an important point about atmospheric predictability—that any small effect in the atmosphere will, in principle, ultimately affect everything that occurs in the atmosphere. And a unique research center, built on a mesa high over Boulder, Colorado, is unraveling this and many other complex aspects of the atmosphere.

Slablike, silhouetted against the jagged wall of the Rockies, the National Center for Atmospheric Research (NCAR) looks like a 21st-century Stonehenge. In fact, the futuristic building, designed by architect I. M. Pei to match the predominantly sandstone backdrop, was the setting for Woody Allen's *Sleeper*, a comic film about an askew tomorrow.

NCAR's researchers—scientific druids in their space-age megaliths—also look into the future. The climatic future. And they, too, see things askew. They are finding that the gas ocean we breathe is far more complex than we imagined, that our industrial civilization's exhalations could return to haunt us. And they are finding that our atmosphere is so sensitive it is affected even by insects.

So far, no one has verified meteorologist Edward N. Lorenz's whimsy about Brazilian butterflies causing Texan tornadoes. But one group of NCAR scientists is taking a hard look at termites. In fact, it was Brazilian termites that inspired this research.

The scientists are studying biology—like meteorological CPAs, they are auditing the transactions between the Earth's atmosphere and its living things. As team member James Greenberg puts it: "Biology may be the main source of the atmosphere as we have it today, which could explain why the other planets' atmospheres are so different."

For the first time, he says, humans are equaling biological processes as generators of atmospheric gases. And he adds: "To understand Man's impact, we first have to understand these biological processes."

It was during the summers of 1979 and 1980, while trekking through the Amazon rain forest, that the NCAR scientists became termite conscious. They were in Brazil not to study insects but to hunt for fires.

"We had always thought the southern hemisphere would be pristine because there is so little industry," says Greenberg. "But we found as much carbon monoxide over the Amazon jungles as over U.S. suburbs—that was a big discovery."

The source? Brazilians are cutting down their jungles to make way for farms and highways, burning the chopped-down vegetation. And it was to measure the impact on the atmosphere of this slashing and burning that the NCAR scientists were scouring the jungle, seeking the plumes of burning brush.

This simulation of entire planet's climate results from computer modeling on NCAR's powerful CRAY-1.

Biological chemist Patrick Zimmerman, who studies effects of emissions into the atmosphere, flees intense heat and smoke of a Brazilian brush fire after capturing gas sample in specially designed canister.

"Those fires were so intense that your own clothes were too hot to touch," says Patrick Zimmerman, the group's leader (above). He would teeter along a log as close to the flames as he could tolerate, wearing a gas mask. Then he would open an evacuated stainless-steel bottle, capturing the smoky air. Later, by analyzing the air samples, the team would learn which gases, and how much of them, the jungle burning releases.

"But while we were studying the fires, I noticed termite mounds and nests everywhere," Zimmerman continues. Termites, it turned out, are indeed everywhere, contentedly chewing wood on two-thirds of the planet's dry land. "Microorganisms in their stomachs break wood down," he explains. "We estimate that termites may emit three times more carbon dioxide than the atmosphere receives from fossil fuel burning, and they emit other gases, too, including methane." Some scientists maintain that the atmosphere's methane content has been increasing about two percent per year, he adds. And one reason may be deforestation: as the jungles come down, changing the habitat, the termite population is shooting up.

"Termites could account for 12 to 43 percent of the global emissions of methane," Zimmerman muses in his Colorado laboratory (p. 92), contemplating jars where termites exhale for science.

What are the effects on climate of this slash-and-burn deforestation, which is under way around the globe? And of the termite explosion? So far, no one knows. But as Greenberg notes: "Termites are the big buzz in atmospheric chemistry right now."

Termites and jungle fires are just bits of data the NCAR scientists are adding to the picture of the Earth's atmosphere they are painstakingly collecting.

To gather the data they fly around the globe in a squadron of research planes, ranging from jets to a four-engine Lockheed Electra with an elongated instrument nose that makes it look like an aeronautical Pinocchio. From a base at Palestine, Texas, they launch balloons as tall as 40-story skyscrapers.

In a sense, some of the balloons are extraterrestrial, designed to waft robot telescopes above the smudgy

Richard Wolkomir, a free-lance writer living in Vermont, has recently written several "Last Page" columns and a feature story on Arthur D. Little.

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lower atmosphere, giving scientists a sharp look at our nearest star. For it is the sun, of course, that ultimately drives Earth's weather. And it is there, 93 million miles away, that NCAR begins its study of the Earth's atmosphere. Among other things, NCAR sun watchers are finding that it seems to be contracting, or possibly pulsating with a sort of solar heartbeat.

To find out, a solar telescope (p. 97) is measuring the sun's girth precisely. Every day at seven minutes before noon, on the roof of a shrinelike appendage of NCAR, a hatch opens, letting the sun shine in. Mirrors inside then catch the sun's image and project it onto an array of photosensors. As the solar disk inches across the faces of the sensors, they measure its diameter. Then, at seven minutes past noon, the hatch closes, shutting down for the day.

Finding out what the sun is doing

Data from NCAR's new solar measuring instrument should settle the issue. Then theorists will begin seeking the reasons. "But I wouldn't be surprised if we ultimately find that this initial shrinkage rate is wrong, or not the most important thing at all, just a hint," states solar physicist Jack Eddy. "We didn't build this telescope to prove the sun is shrinking; we just want to find out what the sun is doing."

Eddy is a senior scientist at NCAR's oldest division, the High Altitude Observatory, where study of the sun began in 1940, some 20 years before the National Science Foundation organized the rest of NCAR in 1960. "In the late 1950s, Washington perceived that U.S. research in weather and climate was a disgrace, that the Soviets might be ahead of us," says Margaret Drake, an administrator at the laboratory. "That was scary because accurate weather predictions give you a military edge."

With the already operating High Altitude Observatory as a nucleus, the National Science Foundation created what is probably the world's leading atmospheric laboratory. But solar research remains the starting point for understanding the atmosphere, just as it was when the observatory's astronomers worked alone. For them, all that has changed is the technology: today they can observe the sun from space, beyond the atmosphere's murk, as they did in 1979-80, when the sun became highly active. It was a period called the "Solar Maximum," when turbulence on the sun was at its peak. Flares erupted near the solar surface. High up in the corona, titanic outbursts called "transients" blasted billions of tons of gas into space at a million miles an hour, an explosion equaling a million H-bombs. How might this solar activity affect the Earth's atmosphere?

To find out, senior scientist Lewis House led a team of NCAR astronomers to NASA's Goddard Space Flight Center, in Greenbelt, Maryland. There they joined other scientists from around the world. From a control room, the NCAR group guided and received data from a coronagraph, one of six computer-operated telescopes in a satellite launched specifically to observe the Solar Maximum from space. NCAR's responsibility was to study the relationship between solar activity and transients.

The NCAR coronagraph on the satellite sent 30,000 images of the sun's corona in action (p. 95). Astronomers have only begun to analyze these data, but they already have piqued their interest in "flux tubes," spiraling vortices of magnetic energy that arch above the sun's surface, writhing and wandering. "Something happens in the flux tubes," says House. "They become unstable, maybe because there is a twisting at their feet, maybe because the photosphere, the sun's surface, bangs one flux tube into another, setting off a flare."

Technology has given astronomers new ways to gather such data. And it also has given them new ways to analyze the data they have gathered. "We can rip an image apart, mathematically transform it, enhance it, change the contrast, remove artifacts, all on the computer—we find things we never knew were there," says House. And he adds: "Our data load is so massive that NCAR is the only place we could process it."

To bring their picture of the atmosphere into clearer and clearer focus, the meteorologists need an immense amount of data. And it comes in continuously from aircraft, balloons, robot buoys and field stations, satellites, expeditions—too much for the hu-

Back at the lab, Zimmerman peers into termite colony whose methane and CO_2 production he measures.

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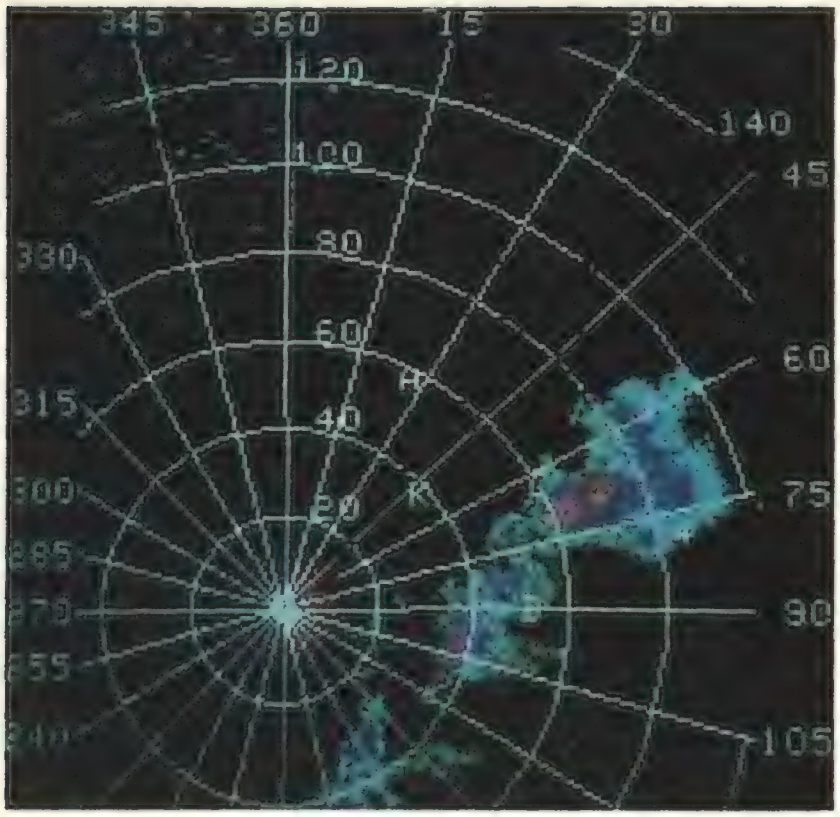


Radar image of thunderstorm, on screen in Miles City operations room, helps in guiding research aircraft.

Large vortex of a typhoon off the coast of New Zealand was photographed from Skylab 4. Such

man brain. Fortunately, however, NCAR has an in-house electronic brain.

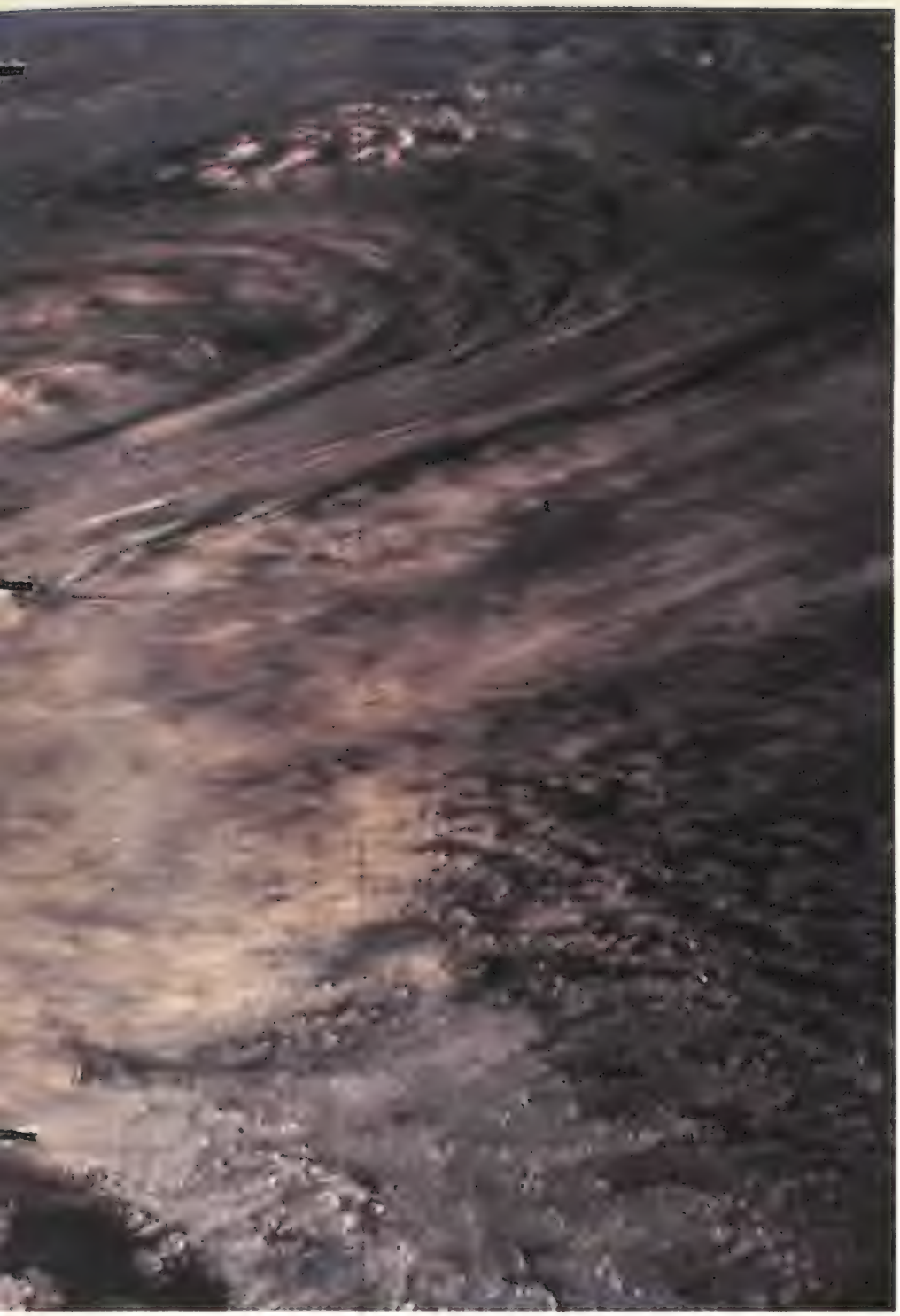
"The big computer is the heart of the center, the heart of the work," says Margaret Drake, deputy director of the laboratory's Scientific Computing Division. The CRAY-1—"the big computer"—holds sway over an underground chamber crammed with computer processors, terminals and rows of rumbling data storage units. And it is a genius among machines, zipping through 80 million instructions per second. It looks like modern sculpture, with windows revealing blue wires massed tightly inside.

NCAR scientists can communicate with the CRAY-1 from terminals in their offices. Meteorologists at the 75 U.S. and Canadian universities and research institutions that are hooked up to the computer can communicate from terminals of their own. Those who use the CRAY-1 are engaged in all sorts of quests.

Raymond Roble, for one, hunts auroras, the shimmer in the sky set off when the solar wind of electrons and protons smacks into our atmosphere. Solar eruptions can intensify greatly the flow of particles, and that can dramatically shift the Earth's high-altitude winds. Wind speeds, normally no faster than 450 mph, can jump to a roaring 1,433 mph, clocked high over Boulder in 1974, on the Fourth of July. Roble aims to learn how the aurora and the solar wind affect the weather of our upper atmosphere.

Using sea-floor listening posts, submarine buoys, satellites and other Flash Gordon gadgetry, one NCAR team keeps tabs on the seas, which store solar radiation and help move heat around the globe. For instance, the NCAR oceanographers, headed by William Holland, are now studying Gulf Stream eddies that act like atmospheric storms; they transport heat vigorously toward the equator and toward the poles, helping to balance the planet's energy budget. As William Holland points out: "Until we understand the oceans, we can't really understand the climate system."

Robert Schware, an NCAR political scientist, recently camped in several isolated villages in West Bengal, India, interviewing village elders about the country's flood-warning system. During severe storms in the monsoon season, the official communications network, which includes telephone and telegraph systems, often bogs down, he learned. Villagers, however, have an alternative, loosely organized but swift and far-reaching warning system—the "folk wireless"—which includes such environmental cues as birds



pictures give meteorologists an invaluable tool for understanding and predicting weather patterns.

flocking and ants moving their eggs to higher ground. Schware has made recommendations to several government agencies on how to make better use of both systems, official and folk, for flood warnings.

Sometimes research looks a lot like adventure. During the summer of 1981, a small army of atmospheric scientists set up a command post near Miles City, Montana, and launched an air war against thunderstorms. Their weapons were a motley squadron of 14 planes, ranging from jets and a sailplane to a vintage Korean war trainer armored to withstand hail.

When radar picked up an approaching squall, NCAR's Brant Foote, codirector of operations for the project, would scramble the planes. Inside the murky cloud, their aircraft's instruments collecting air samples and clicking off data, the pilots would rely on Foote's radioed commands to keep on course as the storm's violent winds heaved their planes high up,

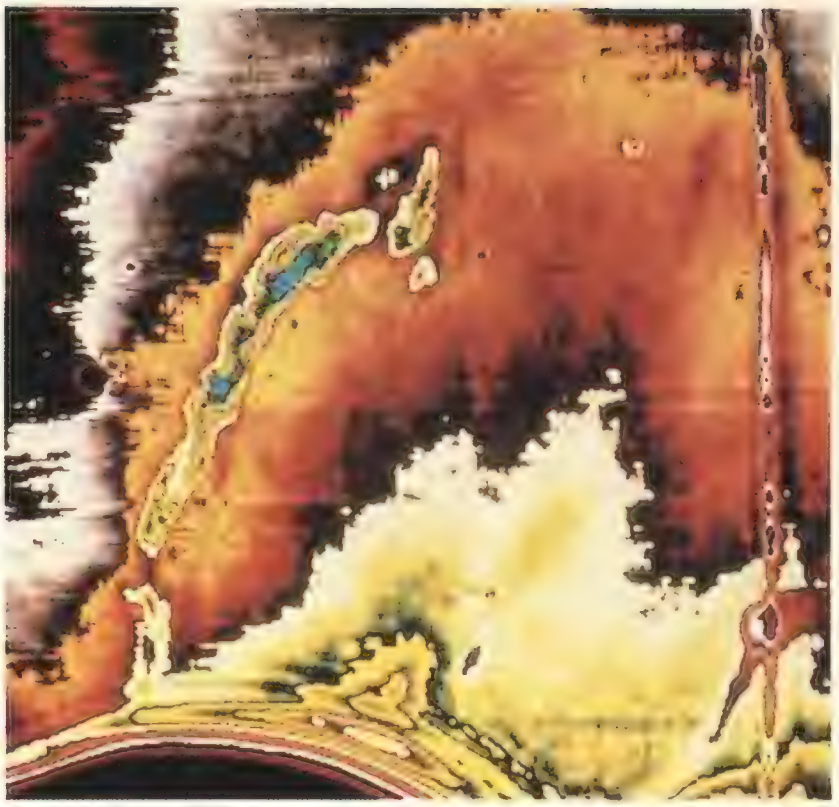


Photo of sun's corona, taken from satellite in 1980, is computer-enhanced (colors indicate light intensity).

slammed them down and shook the controls. "We had to convince pilots it could be done," says Foote. Scientists now have more data than ever before on thunderstorms. "We'll be analyzing the data for up to five years," he adds.

At the Rocky Mountain Stonehenge on the mesa, the process is called "modeling": at their computers, the scientists transmute data and mathematical equations into analogues of the Earth's atmosphere. Often they learn more from the models than from the atmosphere itself: the atmosphere is willful, but they can make their model storms behave just as they wish.

Warren Washington, leader of NCAR's Global Climate Modeling Group, likes to show a computer model of the Asian monsoon to newcomers to atmospheric simulation. On the screen, in vivid yellow and blue, simulated winds gather high up over the Himalayas, whirl into a frenzy, then swoop down over India, shifting and veering. Scientists working with such a model can alter the "atmosphere"—add humidity, perhaps, or step up the flow of particles from the sun—and then see how the model changes. "You can start with the atmosphere at rest," explains Washington. "And then you can turn on the sun."

How do modelers simulate the atmosphere? Typical is NCAR scientist Joseph Klemp's model of a Great Plains thunderstorm, which he uses to study the formation of tornadoes. Klemp began by teaching his computer all about thunderstorms, the physical laws governing everything from the momentum of air parcels to the heat released as water vapor condenses.

Then, on paper, Klemp divided a section of the atmosphere into cubes, each cube representing an area about a half-mile long on each side. The corner of each cube was a point at which a full set of equations was solved, 80,000 points in all. He had data from an actual Great Plains thunderstorm that scientists had once observed in detail. Beginning with atmospheric conditions that would prevail in the area of the storm, he introduced a disturbance that then grew into a storm within the model atmosphere.

The storm developed according to the physical laws that Klemp had taught it. Next, he tested his model, comparing its results with the data observed in the actual storm that had occurred. It took about two years to develop and perfect the modeling procedures.

Along with another scientist, Richard Rotunno, Klemp sends his fictional thunderstorm scudding across the CRAY-1's electronic Great Plains. They adjust and compare the speed of prevailing winds. Or the pressure. Or the humidity. Under what conditions, they hope to learn, does a storm spawn a tornado?

"Modeling is the major thing we do here," says Stephen Schneider, an NCAR climatologist. A bushy-haired 37-year-old, Schneider already is a lion of climatology, working in areas of the field that are younger than he is. "I was studying plasma physics at Columbia in 1970 when I heard Barry Commoner speak about dangers to the climate," says Schneider. "I took some classes and found that little had been done on climatology because, until about 1965, we lacked the two technologies this kind of research requires—big computers and satellites."

Schneider does not work with mere thunderstorm models. He simulates the entire planet's climate, even that of the distant past and the future. "Modeling is a surrogate for a twin Earth," he says. "It gives us an Earth with which we can experiment."

Some of these experiments have alarmed Schneider. He is concerned about the possibility of a carbon dioxide catastrophe. Ordinarily a harmless gas, in the atmosphere carbon dioxide acts like insulation: it prevents solar heat that the Earth absorbs from radiating back into space. More carbon dioxide in the atmosphere causes the Earth to grow hotter. And, because of industrial civilization's intense burning of fossil fuels, the carbon dioxide level is building.

Climatic models show a steadily warming climate. Among the worst possible scenarios that could occur, vast areas now fertile might become arid. Or, as polar ice caps melted, sea levels could rise, drowning vast coastal areas, including parts of such cities as New York, Tokyo, London and Washington. Schneider advocates planning now to avoid possible catastrophe.

Meanwhile, working with colleagues Eric Barron and Starley Thompson, he also peers into the past. Currently, they are exploring the Cretaceous period, 135 to 65 million years ago, at the end of which the dinosaurs mysteriously vanished. Half the globe's petroleum and coal deposits were created then. If they can duplicate the Cretacean climate, they may be able to give geologists prospecting clues.

They began with this question: why was that period so much warmer than today? "We have one solid piece of evidence—the continents were then in different locations," says Schneider. They ordered CRAY-1 to restore the continents to their Cretaceous sites. That created more sea area, enabling the planet to absorb more solar heat. The climate warmed up a couple of degrees. It was enough to melt the polar ice caps, opening up more ocean area, enabling further absorption of solar heat. The simulated climate notched a few degrees higher. What was still missing?

Recently Schneider found a Soviet study of Cretaceous rocks suggesting that the atmosphere then had seven times more carbon dioxide than it does today. Now he is adjusting his model to include the possibility that the amount of carbon dioxide was greater then.

Even in the distant past Schneider sees hints of the warming he foresees for the near future. He urges development of new crops that can withstand aridity and of alternatives to fossil fuels. "So the physical sciences connect to the biological sciences and the social sciences," he says. "And the Cretaceous ties to the present and the future—you could call it the carbon dioxide connection." Or you could call it the NCAR connection. As Schneider puts it: "The most important thing here is the breadth of interest."

Solar telescope designed by NCAR scientist Timothy Brown measures sun's diameter every day at noon.

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hutchnergarth

By Fred Strebeigh

Hot on the trail of the elusive *moots* and *woolies*

Professor Cassidy for 17 years has pursued seldom-heard words and phrases for his Dictionary of American Regional English

Two and a half years ago, Professor Frederic G. Cassidy, editor of the *Dictionary of American Regional English*, was puzzling over the meaning of "black ice." About then a newspaperwoman came by, and he told her how, a while ago near Seattle, a researcher had taken this down: "We don't have much trouble with snow, but we do with black ice." Whatever it was, "black ice" belonged in the first volume of the dictionary he was making. But what was it? "If anybody knows," he told her, "I'd be glad to know."

A bit later I read her story in my daily paper, and it took me back 20 years. Not to Seattle, as it happens, but to eastern Massachusetts. There on a pond by a neighbor's yard, if winter came with a snap, the ice would form smooth and thick and clear, looking as dark as the depths of the pond, and with skates we would glide, as quicksilver slides on glass, over the "black ice."

In full reverie, knowing I wasn't really helping, knowing I came from the wrong edge of the continent, I wrote the professor. And what came back was a form letter. In a couple of typed lines it thanked me for my interest, apologized for being impersonal, said mail had been heavy. Then, beneath the typing, an old man had begun to write in a crabbed hand. Professor Cassidy wanted me to know that he appreciated my letter. (He didn't say what I know now, that 50 others had written to him). He appreciated the information. (It was nothing new.) Perhaps to compensate for even sending a form, he filled two-thirds of the page with letters almost as compact as those in this column of print. I was pleased that anyone would take such time. But I didn't know then what I know now, that Professor Cassidy doesn't have much time.

Though the *Dictionary of American Regional English* has not yet printed its first definition, Professor Cassidy has been working steadily on DARE, as he likes to call it, ever since 1965. The DARE offices look out over an architectural collage—the gabled, crenelated, pointed, flat, turreted, conical rooftops of the University of Wisconsin, where Professor Cassidy has been part of the English faculty since 1939.

His own small office sits at the end of a hallway, doors open. Bookshelves overflow: *Place Names of the West Riding*, the *Dictionary of Canadian English*, handwritten notes for the *Dictionary of Jamaican English*, and a textbook on Old English and another on the history of the English language, both revised by Professor Cassidy and both standards in their fields. Walls are covered: a needlepoint sampler reading "A Good Pun Deserves to be Drawn and Quoted," photographs of grandchildren, three likenesses of Samuel Johnson together with a photograph of the garret where he wrote his dictionary two centuries ago. On the desk sits an owl paperweight, and above it are taped two postcards of owls. Behind the desk sits Professor Frederic Cassidy in a neat sport jacket. Above his ears protrude tufts of silvery hair, and he peers about the office with large alert eyes, looking himself a bit like a wise and energetic old owl in spectacles.

"The work's the thing"

When I arrived there recently, hoping to learn more about DARE and its editor, he bade me welcome, removed clutter from the seat of the only spare chair in the room, invited me to sit, and made it clear that he far prefers talking about his dictionary to talking about his own part in it. "The work's the thing," he said at one point, slapping the top of his right knee. But further along he acknowledged that "I've been interested in words for as long as I can remember."

Sixty-four years ago, when Frederic Gomes Cassidy arrived at age 11 in Akron, Ohio, he had already learned two languages—neither of them American English. His classmates at Akron South High School, in which he enrolled before he was 12, thought him a "very queer object," he recalls. "My speech—partly

DARE researchers have found at least 176 names for the rolls of dust that collect under beds.

Drawings by John Huehnergarth

He may be a *hayseed* to some; to others he's an *apple-knocker,* a *mossback,* a *goober-grabber.*

they couldn't understand it, partly they mocked it."

The languages he knew, dialects really, were the refined colonial British of his native Jamaica, which was spoken in his home and school, and the Creole speech of Jamaica's streets and playgrounds—which most elite Jamaicans mocked, calling it simply "the dialect" or, more simply, "bad English."

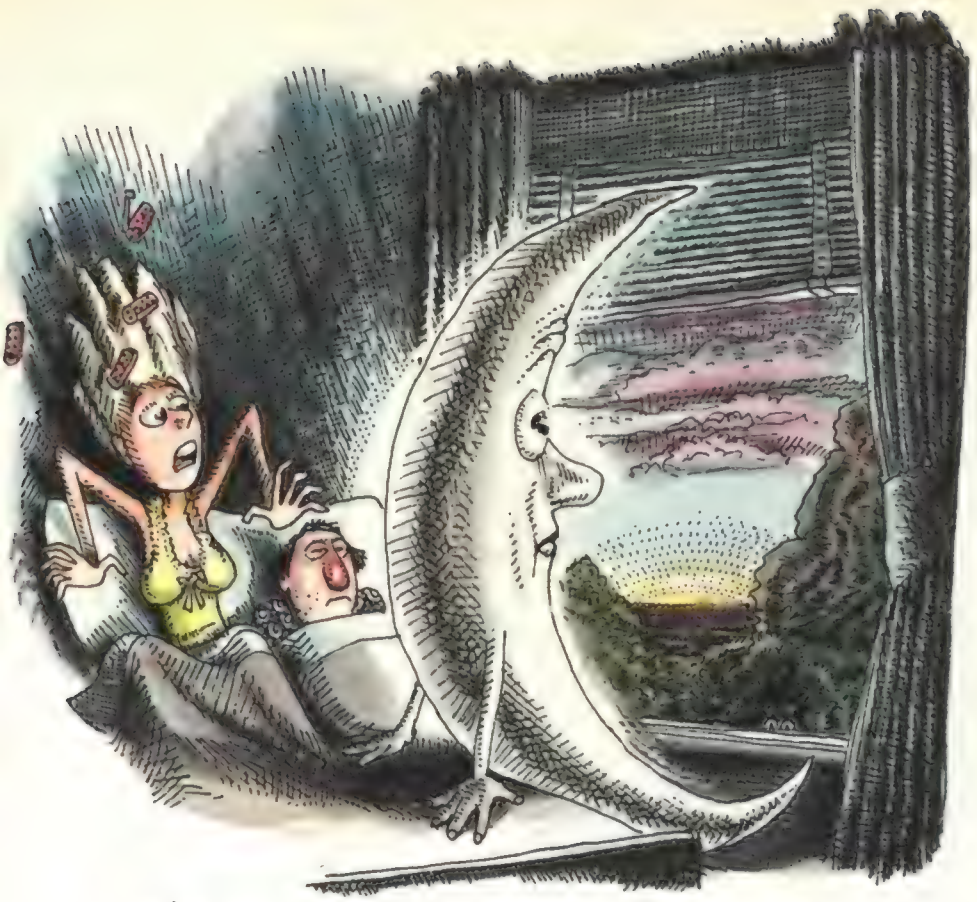
In Jamaica he was not one of the mockers, in part because his mother taught him to appreciate the proverbs and folktales that Jamaicans had brought with them from West Africa. At the same time, his parents sharpened his interest in standard English. He and his father would make bets on the meanings of unfamiliar words, a shilling a try, and hunt them down in the big Webster's dictionary—the same dictionary which, a few years earlier when he had been too large for a high chair but too small for a normal one, he had sat upon when dining at table with his family.

Jamaican childhood, followed by exposure to the immigrant community of Akron, provided a primer on the varieties of dialect speech that Professor Cassidy has been adding to ever since. He published his *Dictionary of Jamaican English* in 1967, the product of 16 years of research and months of roaming along Jamaican back roads with a tape recorder.

But even before it was in print, he had begun his second dictionary, the *Dictionary of American Regional English*—which will be the definitive work on the dialects and regional speech of the world's largest English-speaking population. Once its five volumes have been published by the Belknap Press of Harvard University, which expects to print the first in the spring of 1983, it will finish a project that was first dreamed of at the founding of the American Dialect Society in 1889, and that remains eagerly anticipated. William Safire, language watcher and columnist for the *New York Times,* calls DARE "the most exciting linguistic project going on in the United States." Professor John Algeo of the University of Georgia, editor of *American Speech,* calls it "the most important lexicographical work of the century"—an apt description, since Professor Cassidy and his staff of ten editors will be pressed to finish before 1989, at which point the idea for DARE will be 100 years old.

When the American Dialect Society chose Professor Cassidy to put DARE together, it gave him its blessing and its 70-odd years of word lists—a rich trove, but largely compiled, he says,"in those places where English professors took their summer vacations." DARE needed more systematic collecting, and Professor Cassidy set out to get it. For starters, he gathered five

Fred Strebeigh is a tutor in writing at Yale. He says his only contribution to DARE is tidewalker *(origin, eastern Massachusetts).*



Whether it's *fo'day, dawning, peep-of-day* or 72 others, it's too early in the morning.

graduate students, equipped them with camper vans which he christened Word Wagons, and sent them on pilgrimages across America, interviewing people in pursuit of what he calls "the elusive lexeme." Question # 1: *What do you call the time in the early morning before the sun comes into sight?* Answers: *twilight, fo'day, dawning, peep-of-day* (and 71 more).

The interviewers' routes were far from random. Professor Cassidy told them what communities to visit and whom to look for: natives who had not been long outside their community, who were of both sexes, of all races and all levels of education, and of all ages but leaning toward the elderly because, says Professor Cassidy, "they know more." Q # 137: *Soft rolls of dust that collect on the floor under beds or other furniture?* A: *bunny-tails, house moss, woolies, rats, moots, dust kittens, difflewuzz, collywobbles* (and 168 more).

To complete each interview, the interviewer had to ask 1,847 questions, each precisely phrased. Q # 642: *What other names do you have around here for the jack-in-the-pulpit?* A: *devil's ears, dragon roots, pepper turnips, swamp cherries, memory roots, preacher jacks, bog onions* (and 35 more). The young interviewers occasionally encountered resistance. People in some towns took them for agitators and chased them off. Q # 1221: *Names and nicknames for a rustic or countryfied person?* A: *apple-knocker, clodhopper, country jake, hayseed, mossback, pumpkin husker, rail-splitter, stump farmer, swamp angel, goober-grabber* (and 342 more).

Those people who did welcome the interviewers, with their 325-page book of questions, learned that often they had to call in a neighbor or relative to help, and that the whole process took about a week. Q # 1486: *The table was nice and straight until he came along and knocked it. . .?* A: *antigodlin, catawampus, crank-sided, whopperjawed, skew-gee* (and 186 more). Sometimes, remarkably, the interviewers found that after all 1,847 questions were done they would be asked: "You got any more?"

By 1970, thanks to the word wagoners and to many other interviewers urged on by Professor Cassidy, DARE had questioned 2,752 people in 1,002 communities in all 50 states, and gathered some two-and-a-half million responses. These, fed into a computer for sorting, amount to half of DARE's files. The rest come from collections made by dialecticians and folklorists in the past century, and from thousands of books and hundreds of newspapers.

With collecting largely completed, Professor Cassidy and his small staff prepared to edit the letter A. First, they transcribed reams of DARE information onto slips of paper and put them in long file drawers. By completion, DARE files will hold some 180,000 slips—almost all handwritten.

Meanwhile, DARE's computer was taught to produce maps, hundreds of which will be published as illustrations within the text. They will show, for ex-

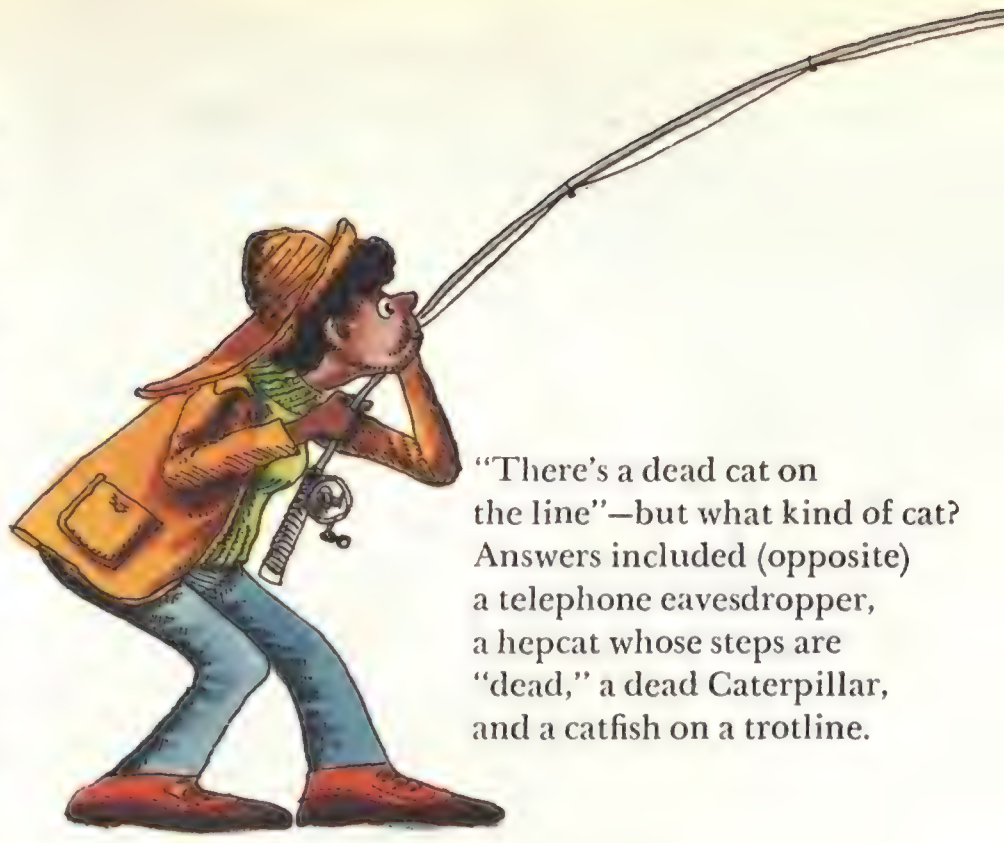
Jack-in-the-pulpit goes all the way from the holy to the hellish: *preacher jacks* or *devil's ears.*

ample, where in America people tend to respond to a sneeze by saying not "Gesundheit" but "scat" (mostly in the Southeast), or where the meal that most people call a "potluck" or a "covered dish" is called a "pitch-in" (apparently only in southern Indiana).

One of DARE's most demanding tasks, however, has been trying to make sense of the many mysterious words or phrases among the millions gathered. Q: *When you suspect that somebody is trying to deceive you, or that something is going on behind your back, you say, "There's. . . ."*

Twenty-one people, 14 of them black, gave a single answer: *"There's a dead cat on the line."* Neither DARE, nor anyone in the world of regional English, knew what to make of it. What kind of cat? What kind of line? Professor Cassidy took the questions to the members of the American Dialect Society, but answers were thin. Then a year ago, William Safire, in one of his frequent efforts to help, posed DARE's dead cat problem in his weekly column on words, which runs in the Sunday *New York Times Magazine* and some 300 other newspapers.

Back flowed the mail. A Floridian said the cat might be a third party eavesdropping on a two-party telephone line. A person from Connecticut suggested the cat could be "a stranger in a line dance, whose movements were 'dead' because he didn't know the steps." A New Yorker wrote about a dead cat on the line dividing a two-lane road. A Louisianan mentioned a dead Caterpillar tractor that had been working on a gas pipeline.



"There's a dead cat on the line"—but what kind of cat? Answers included (opposite) a telephone eavesdropper, a hepcat whose steps are "dead," a dead Caterpillar, and a catfish on a trotline.

Polite as ever, Professor Cassidy answered the mail. To some, he recalls, "I had to say, 'Thank you, that's a good guess, but it's not the sort of thing I can use in a dictionary.' "

He was stumped. Then came a hand-scrawled letter from an old man in Louisiana. He explained that when you go after catfish, you put a trotline, with many hooks on it, out in your bayou. And every day you check it. If a fisherman comes by and finds a dead catfish on a neighbor's trotline, he knows something's suspicious. For some reason his neighbor hasn't been tending his lines: something's fishy.

A few days later, feeling the old man had solved the mystery, Professor Cassidy set off, as he often must, in search of solutions to another ongoing DARE question: where to find the money to keep going? Despite the generous help over the years of the National Endowment for the Humanities, the Rockefeller and Mellon foundations, and other contributors, DARE's continuance has never been assured from year to year. As it happened, in New York Professor Cassidy learned that Mellon wished to continue its support and, elated, he set off for a nightclub. "There was a large black woman," he recalls, "who called herself a 'gospel singer,' though she sang only one for Jesus and the rest were miscellaneous." Partway through her miscellany, she began a song with a slow refrain: "If a child don't favor his father some way, *there's a dead cat on the line.*"

"She sang it over and over again," he says. "I almost jumped out of my chair."

Though he enjoys his own sleuthing on behalf of DARE, Professor Cassidy often seems more interested in what the members of his staff are looking for. In particular, he seems to feel that anyone curious about

"Surely those who deal in the field of regional English should know what a *fade barn* is. . . ."

the dictionary would make a mistake not to talk to Goldye Mohr.

In tracking down regional words, Mrs. Mohr, as most everyone calls her, has interviewed people from Hawaii to Maine and from northern Minnesota to southern Florida, always on her own time. "I never take a vacation," she says, "without I look for words."

More officially, as the DARE bibliographer, she has compiled a record of the more than 5,000 publications from which words have been culled. In addition, she has read through all 48 volumes of the guides to the American states published by the Federal Writers Project, for example, and all 99 volumes of the *Journal of American Folklore,* panning for words. This part of her work she likes to take home because, she says, "I have always wanted a job that I could honorably pursue in bed."

But her greatest pursuit on behalf of DARE has been of the elusive *bettywood.* In Bourbon County in the state of Kentucky, at least until the early parts of the last century, surveyors marking the metes and bounds of a property would often pace the distance from a species of tree called the bettywood. The tree should still be in Bourbon County, but now no one knows it by that name.

Almost everyone at DARE has looked for clues. Professor Cassidy has written to the head of the National Arboretum; no response. Sheila Kolstad, DARE's science editor, has studied the historical distribution of trees to see what might have grown in Bourbon County two centuries ago, if not now; no news.

Mrs. Mohr, however, has led the chase. She has looked through ancient issues of the *Kentucky Gazette.* She has sorted through archives seeking biographies of any surveyors at work 200 years ago in Bourbon County. She has journeyed to Bourbon County, twice, to confer with the living expert on the subject—who, Mrs. Mohr says, has been looking for the answer to the bettywood mystery since 1952 and whom she describes as "a very interesting old lady—about 85 years old."

Professor Cassidy has made two promises regarding Mrs. Mohr. The first is that if she finds the bettywood tree before the first volume (A to C) is published, even if the book is at the printers, he will stop the presses and get it into print. The second is that when the dictionary is published, he will take her on a trip to Jamaica. They both seem to plan on going, and they are both aware—though they don't dwell on it—that Mrs. Mohr is 84 years old.

Some of DARE's word sleuths, of course, solve their mysteries with relative ease. The problem of finding out how farmers use a *fade barn*—a word that a DARE interviewer picked up in North Carolina without picking up its meaning—fell to Joan Hall, the dictionary's associate editor. She wrote for help to the Raleigh *News and Observer* in North Carolina, and in turn one of the newspaper's columnists put the question to his readers.

Responses—from an insurance agent, an optometrist, a lawyer, a professor of history and, presumably, a few farmers—came back thick, fast and less than charitable. One asked the local columnist: "Where are you from, anyway?" Another chided the dictionary: "Surely those who deal in the field of regional English should know. . . ." All boiled down to the same thing: "A fade barn," in the words of a man from Southern Pines, North Carolina, "is whar you stow fade for the livestork."

Bettywood, though documented in Kentucky surveyors' reports, still eludes DARE researchers.

What do Americans call a cloudburst? Among 175 other names, they call it a *goose drownder.*

But, finally, why should anyone so tenaciously pursue the bettywoods, the dead cats and the 175 different names—*a tree bender, a sewer clogger, a hay rotter, a goose drownder*—that Americans give to a cloudburst? There may be as many reasons as there are scholars interested in the permutations of language or, for that matter, people interested in opening the pages of a dictionary. Professor Cassidy, for his part, denies he has any particularly personal goals. "Remember, the Dialect Society was founded by the great linguists of their time," he says. "I'm just one figure in this, and my motives are very similar to theirs. I'm just the person who was foolhardy enough to take on the enormous job."

But still, he has his reasons. "Unfortunately, pride of education," he once wrote, thinking of his native Jamaica, "often brings with it scorn of the homely, or at least a tendency to hide the homely." But, he added some time later, "Any speech is as interesting as the people who speak it: it is the most revealing reflection of their lives."

And what of the regional speech of America? "Some people," he says, "say, 'Don't other folks speak funny!' You know: 'everyone but me speaks a dialect.'

"What they don't see is that there are folk among the people who are artists with language, poets who can originate ways of saying things that are extraordinarily sensitive. In preliterate societies, there were always people who were storytellers, who preserved the folktales of their people. And they come through in DARE, because what we have here is the preservation of oral literature—things that don't usually get into artistic writing, and not even into regional novels or poetry."

And so Professor Cassidy and his staff work on, pushing to finish. "I have always felt," says Cassidy,

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"that I would live a long life, that I would have time to get something done. But until this is finished, I don't deserve and certainly don't want any praise. That's only begging for fate to do what fate does. I just want enough people to say, 'Yes, it's a good thing. We'll help you get it done.' "

At Christmas last year, the DARE staff was facing the dilemma of what to give a man who seems to have all but one of the things he still wants in life. In the past they had not been satisfied with their gifts to him —boxes of cheese and old books.

They knew he would again be using his holiday to talk to the foundations and agencies whose generosity keeps DARE going. He would report that work went well, that letters up to M were under way, and that six letters—A, D, E, F, G and I—were finished. To the staff, he often spoke lightly of the fund raising. "I've done everything short of prostitution," he says, "or let's call it gigoloism." But he worried and they worried with him.

Still thinking of Christmas presents, someone suggested that DARE's progress might look better to the foundations if a couple of additional letters could be finished. And so the staff began to come in early and on weekends, in secret, working on words like *zanzy* and *zebra bird*, on bits and pieces like *x-y-z* and *x-and-o*. For Christmas, they gave Professor Cassidy the letters X and Z.

Professor Cassidy works in his office before
a punning sampler and a portrait of Samuel Johnson.

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By Stephen DiLauro

At this foundry ideas flow as well as molten metal

A freewheeling but businesslike approach, an apprentice system and new techniques bring top sculptors to the Johnson Atelier

Two Johnson sculptures at ease outside foundry. One on bench is being sandblasted on opposite page.

Extending the language of sculpture by implementing the most modern foundry techniques is what the Johnson Atelier is all about. Located in Princeton, New Jersey, this new technical institute is rapidly attracting the attention of some of America's foremost artists. Georgia O'Keeffe recently cast several pieces there, as did George Segal. Peter Voulkos, Beverly Pepper, Marisol, Isaac Witkin, Joel Shapiro and Juan Hamilton all make regular use of the facilities. The Atelier was begun in 1974 in a space not much larger than a two-car garage by J. Seward Johnson jr., himself a sculptor, whose family founded the Johnson & Johnson health-care products complex. The Atelier has since grown to encompass a staff of 83 artists and artisans, a working area of more than 40,000 square feet, and has more than a million dollars worth of equipment. What is it about the Atelier that makes it so attractive to so many?

Process. Rarely do sculptors have the opportunity to work so closely with a foundry in the formulation of their art. "I am delighted to work there," says the noted sculptor George Segal. "The technical facilities are very advanced. Everyone is anxious to push the boundaries of what can be done."

A unique apprenticeship program teaches 50 students to cast molten metals into the forms needed by artists in pursuit of a sculptural statement. These students are all granted $5,000 scholarships from a trust fund set up by Johnson, as well as a monthly stipend for living expenses.

One of the innovative processes developed at the Atelier was the result of Johnson's insistence that work produced there be capable of resisting the attacks of modern industrial society to which all outdoor sculpture is subject. It is a silicone-glass coating baked into a surface that has been sealed with Incralak, a highly durable acrylic resin. A secondary effect of the coating is that it makes the sculptures virtually graffiti proof. "Spray paint, whatever, it just wipes right off," says Johnson with apparent satisfaction.

Johnson has sold more than a half-million dollars worth of his bronzes in the last two years, and has another $300,000 worth on order at his foundry. Though these figures are hefty ones for an "emerging artist," as Johnson calls himself, they pall before the amount of money he deals with on a daily basis. "I invest an average of a million dollars a day," says Johnson. "You see, I manage a $112 million stock portfolio, as president of an oceanographic foundation." The foundation, which his father started, has its own shipbuild-

The bottom figure is the sculpture. Top one is an apprentice sandblasting ceramic shell residue.

Photographs by Don Hamerman

Protected by hood with independent air supply, workman chases Johnson's cupronickel *King Lear*.

Workman prepares a George Segal bronze casting. In background is a completed Segal plaster sculpture.

ing facilities, including one unmanned and two manned submarines, and it demands much of Johnson's time. "I've always had the neurotic fear," he says, "that the first generation makes it, the second keeps it, and the third spends it away. I belong to the third generation."

An artist in the unusual position of being at the same time a patron of the arts, Johnson is also a main force behind the International Sculpture Conference, which will convene its biennial session this August in Oakland, California. Clearly, Johnson's other commitments require time, energy and attention, but sculpture is the driving force in his life. Extremely casual in his manner of dress, speaking in tones that are upper-crust American, he conveys his opinions and goals with a directness that is underscored by his habit of peering at his listener through one squinting eye or the other.

"The basic appeal of sculpture to me, and I suppose to most other sculptors, is that it is never the same esthetically. Whenever *you* move, *it* changes. In superrealism, like my pieces, this element becomes very important." This change in the viewer's perspective lies at the base of what Johnson calls "the double-take. If the double-take is complete, then the person walking by need not be particularly sensitized to art to enjoy it." This, for Johnson, is the beauty of superrealism: it can speak to the common man where abstraction might be alienating. "My art developed me," he tells you reflectively. "I trained myself to look at people on the street, people I might not otherwise notice; and in looking I saw something good and attractive in these folks."

For the most part Johnson's sculptures are narratives, such as *Balancing Boy and Girl, Crack the Whip, Out to Lunch, Sharing* and *Way Out*; or else they explore literary themes as in his *King Lear* and *Ariel*. One of his techniques is that of placing the sculpture directly on the ground. Another is the use of minutiae, details that, upon close inspection, draw the viewer even further into the story. "What's most important is that the work be placed in a setting that supports the narrative," Johnson emphasizes. "That's one thing I insist upon."

Johnson's love of sculpture is not uncommon among artists, but it is his evangelical zeal, backed up with hard cash and an eye for organizational support for the craft, that has made the Atelier so impressive.

Stephen DiLauro is a New York poet and writer who specializes in the fine arts. He is the coauthor of Perillo: Artist of the American West.

Apprentices Betsy Bowen, right, and Jill Rednor work on Andrea Grassi piece in metal-chasing section.

A foundry for ideas as well as metal

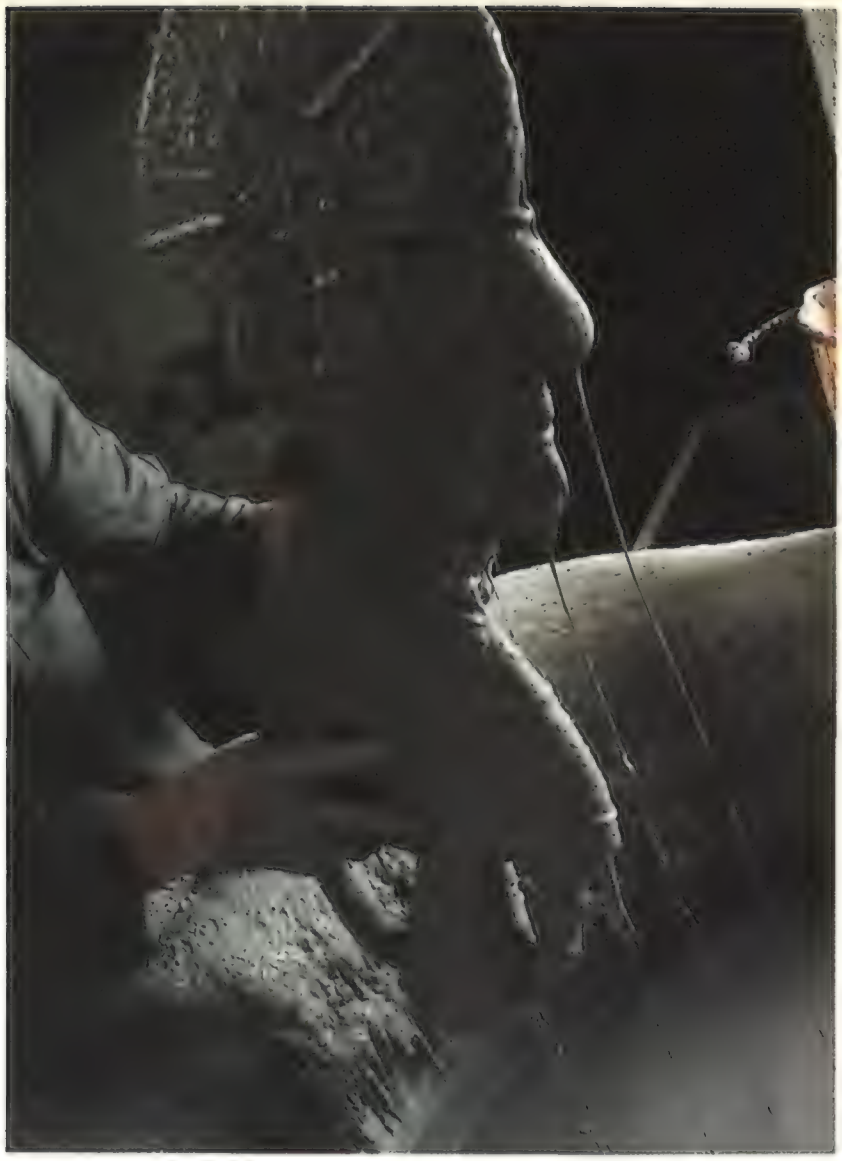
Apprentices in protective clothing about to pour molten metal at 2,000 degrees F into a ceramic shell.

Bead blaster being used here cleans surface without changing texture of sculpture.

The Atelier is open seven hours a day, five days a week, to do the work commissioned by its various sculptor clients. It is open an additional 58 hours a week for apprentices and staff to work on their own sculpture. The only cost to them is the wholesale price of the materials. In contrast, a bronze cast can cost many thousands of dollars if produced at a commercial foundry. Staff and apprentices at the Atelier cast large pieces for what amounts to the price of dinner for two in a good restaurant.

Johnson encourages workers to take advantage of the facilities. "That's why we've set up the place the way we have. America's landscapes and cityscapes are surprisingly barren in terms of sculpture. Everything we do, both here and at the International Sculpture Center in Washington, D.C., is, I hope, helping to rectify that situation."

Confidence is another commodity that young sculptors receive from their experiences at the Atelier. "I didn't think I would ever attempt such a large piece before I came here," said John Mark Heatherington, one of the apprentices. "Yet I was here only three months and I believed in myself enough to take on this commission." The piece he was discussing is a 35-by-90-foot bas-relief that adorns the outside of the Golden Nugget Casino in Atlantic City. Heathering-



Wax positive of sculptor William King's *Day and Night* is dipped in vat of bonding agent.

Finished molds of *Day and Night*, after repeated dippings in alumina-silica, are put on a rack to dry.

ton designed a clay maquette for the sculpture and was subsequently hired to oversee a crew of sculptors and artisans who installed the massive work.

At present the Atelier is not accredited by the National Association of Schools of Art and Design. Some students, however, do arrange to do independent study at the Atelier and receive credit from their colleges. A steering committee composed of apprentices, working with funds provided by Johnson, is heading toward getting the Atelier classified as a technical institute capable of awarding artists degrees. One of the apprentices on this committee, Valery Daniels, brought out an interesting point: "Not all the people here want to see the Atelier accredited," she stated. "Many of the apprentices come here from art school backgrounds, and they don't want to have anything more to do with school-type situations. They are afraid that they will lose the sense of freedom they have here if gaining credits becomes part of the program."

Two sprawling one-story factory buildings, set in an industrial park about a half mile off U.S. Route 1, house the Atelier. Johnson regularly invites an industrial health expert to make inspections of the technical institute—in essence this is what the Atelier is—and to suggest possible improvements in working conditions. He is insistent that the Atelier maintain the highest worker-safety standards in the foundry industry.

The center of gravity at the Atelier is its director, Herk Van Tongeren. Tall, heavyset, with a bushy blond beard and a shaggy head of hair, Van Tongeren, despite his rather relaxed appearance, manages the Atelier with the efficiency of a corporate executive. Under his direction the Atelier went from being almost totally reliant on Johnson's patronage to being almost 90 percent self-supporting. "It's easy for me because all I have to do is deal with other sculptors," says Van Tongeren. "All the apprentices, the whole staff with the exception of the secretaries and one or two others, and all our customers do what I do. Our styles may be different, but our essential interest is the same: the creation of good sculpture."

Commercial foundries tend to look askance at the workings of the Atelier, according to both Johnson and Van Tongeren. "Part of the problem is that for years foundries have kept all sorts of secrets about their processes, even from the artists they work with," Van Tongeren says. "As a nonprofit organization, we believe it is good to disseminate this information as widely as possible. For a while we put out a newsletter that detailed every innovation we came up with. The commercial foundries hated us for that."

Johnson, though, believes that "we are creating a

The maquette—preliminary study for work to come—of Andrezej Pitynski's *Partisans*, in cast aluminum.

whole new clientele for the commercial foundries. Many of our apprentices will go on to careers as professional sculptors, and they will make use of the commercial foundries."

The apprenticeship program has met with varying responses from the professional sculptors who cast at the Atelier. George Segal is one highly satisfied with their accomplishment. "Under the close supervision of a skilled staff," he says, "the apprentices have no difficulty in making very precise duplicates in bronze from my plaster originals."

Isaac Witkin, who works closely with the apprentices and enjoys giving critiques of what they do when asked, is a firm believer in the program. He worked under Henry Moore for two and a half years before going off on his own to do sculpture that has been acclaimed on both sides of the Atlantic. "The openness and experimental atmosphere at the Atelier are what attracted me to it," claims Witkin. "Those elements also make the place extremely valuable for the apprentice. Craft is such an important part of sculpture; and at the Atelier apprentices really learn their craft."

Innovation is at the heart of the Atelier's existence. George Segal asked for, and got, a special coating that would give his bronzes the same white appearance as the plaster casts that are his hallmark.

In addition to filling special orders for color, general advances in foundry work have been achieved at the Atelier. A new, less expensive, more resilient rubberized mold-making material was developed there. Ceramic shell casting, previously used only to produce tiny precision aircraft parts, has been developed to the point where casts as large as 500 pounds can now be executed. "It is their willingness to experiment, to test the boundaries of what is known, that attracted me to the Atelier. That *and* its proximity," says George Segal, who lives a few miles from the Atelier.

From time to time Johnson commissions monumental enlargements of sculptures by various members of the staff at the Atelier. "This is a very subjective thing for me, based on a visceral reaction to the work. I don't have a socialistic attitude about these things," Johnson explains. Johnson recently commissioned Van Tongeren to enlarge one of his *Series Metafisica*, a group of mytho-poetic bronzes. Van Tongeren's first one-man show in New York, held last autumn at the Cordier & Ekstrom gallery, was a big success.

Another favorite of Johnson's is *Partisans* by Andrezej Pitynski. "When I saw this piece," says Johnson, "the strength of it grabbed me. I just knew it had to be large." Large it is: the monument was recently cast in aluminum with a 25-foot base and height of 15 feet. The work depicts five horsemen mounted and armed. "There is no insignia telling what country these people are from. It is a tribute to people everywhere who are willing to fight for freedom," Pitynski commented in his heavily accented English.

Pitynski was something of a prodigy before leaving his native Poland in 1974. While in his early twenties, he was executing public monuments for the Polish government. Then, while on a vacation to the United States, he defected and married an American woman. Now he is the head of the modeling and enlarging department at the Atelier. He expresses his pleasure at his new circumstances in a booming voice: "This is a great place, the best place in the world."

Johnson's most famous piece is probably *The Awakening* at Hains Point in Washington, D.C. The 70-foot-long work, which depicts a humanoid behemoth arising out of the earth, was introduced at the International Sculpture Conference in 1980. Pictures of the giant have appeared in more than 600 newspapers and periodicals. Johnson is now doing a bronze of a man reading a newspaper. Most of the stories etched on the metal newssheet are reprints of news stories about his *Awakening*.

Outside the offices of the Atelier, Johnson says, "I'm not the kind of person who can be satisfied for very long with doing something that only pleases me. I feel I was put on this Earth to accomplish something." Surveying the work in progress all around him, he adds, "I want this place to go on long after I'm gone."

Pitynski, left, and Johnson with finished *Partisans*. Johnson commissioned it after seeing maquette.

A local artist re-created this scene from *Julius Caesar*, one of Library's great productions.

By S. Schoenbaum

The world's finest Shakespeare library is *this* side of Atlantic

The Folger, right in Washington, D.C., is a renaissance landmark in every sense but age—it's 50 years old this month

No easy task, but were I to select just one book expressive of the special character of the Folger Shakespeare Library in Washington, D.C.—a library filled with treasures—I suppose it would be the Vincent Folio. The first collected edition of *Mr. William Shakespeares Comedies, Histories, & Tragedies*, published seven years after the poet's death, may not be the rarest of rare books, but it is surely one of the most precious. Fully half the 36 plays that John Heminges and Henry Condell, Shakespeare's old acting colleagues, brought together to honor their friend's memory had never before appeared in print, including some which posterity has most cherished—among them *Macbeth, The Tempest, As You Like It.*

The Folger's Tudor-style Reading Room lights up the lives of Shakespearean and Renaissance-era scholars.

Augustine Vincent, a high functionary of the Heralds' College, counted among his friends William Jaggard, who with his son Isaac printed the First Folio (as the book is called). William died while it was still being produced, but not before presenting Vincent with an early copy. The latter duly acknowledged "William Jaggard Typographer" for the gift in his bold hand on the upper right-hand corner of the title page. (It is, so far as we know, the first copy of Shakespeare's works to be given as a gift.) The volume (p. 122), still in its original binding, is one of 79 copies of this edition in the Folger collection. The next largest number under one roof anywhere else in the world is—expectedly—in London, in the British Library, which has five copies. These days one is especially

Founder Henry Clay Folger, in Amherst College robe, bought first Shakespeare rarity in 1889.

Between Folger portraits in Reading Room is replica of Shakespeare memorial bust at Stratford-upon-Avon.

mindful of the riches of the Folger, for this month the Library celebrates its 50th birthday.

The Folger is a magnet—a Shakespearean scholar's New Jerusalem—which has lured me irresistibly for a quarter of a century. In the old days, when I lived in the Midwest and taught at Northwestern University, I used to try to fly in from Chicago once or twice a month to grab a couple of days there. Now, when I reside on Capitol Hill, less than ten minutes away on foot, approaching the entrance on East Capitol Street still fills me with wonder and astonishment. What a location! Across the street you can see that noble old pile, the Library of Congress; kitty-corner stands the Supreme Court building; while at the end of the street looms the familiar dome of the Capitol of the United States. Such is the breathtaking confluence of government, jurisprudence and the printed memorials of Western civilization, here at the nerve center of the Free World.

By Washington's monumental standards, the Folger building itself is modest enough: a chaste marble rectangle without columns or pilasters. Instead, fluted shafts separate the nine tall windows; aluminum Art Deco grills on windows and balconies lend an unexpected—and unostentatious—modern touch to the classical facade. At the base of each window a bas-relief depicts a celebrated moment from one of the plays: Portia lecturing Shylock on the quality of mercy, Lear raging on the heath, Julius Caesar lying assassinated in another capital. On the grounds near the entrance an amused Puck holds up his arms; underneath, a carved inscription reads, "Lord, what fooles these mortals be!": an appropriately unsolemn warning for those who cross the threshold to pursue their studies of Shakespeare, the age which produced him, or the heritage—theatrical, critical, cultural—to which he gave rise.

Within, the visitor finds himself transported to the Tudor past. White marble gives way to the warm tones and textures of Appalachian white oak, the materials of the New World thus being drawn upon to express the traditions of the Old. The long Exhibition Gallery, evocative of Tudor-style architecture on the grand scale, becomes itself an exhibition. High up on either side, running the length of the walls, hang decorative pennants bearing heraldic emblems: for (among

The author, Distinguished Professor of Renaissance Literature at the University of Maryland, has written nearly half a dozen books on Shakespeare.

Emily Jordan Folger was Folger's learned and loving partner in heady collecting world of oil tycoons.

others) Queen Elizabeth I; for Shakespeare's patron, the Earl of Southampton; for Richard Burbage, the preeminent actor who first gave stage life to Hamlet, Othello and Lear; for the town of Stratford-upon-Avon, where the dramatist was born and died; and for the city of London, which gave him his fame and fortune. Above the door at the east end—eastward being the direction of England, where it all began—is Elizabeth's coat of arms; at the west end, looking toward the Capitol, is the American shield and great eagle. The building itself thus represents an allegory that Shakespeare's age would have appreciated.

The Reading Room (p. 118), open to qualified researchers, suggests an Elizabethan great hall, perhaps in a college. There are book-lined shelves, balconies, balustrades and a hand-carved screen. At the center stands a huge stone fireplace, heaped with logs. (That is one hearth I have never seen a fire blazing in, and never hope to.) Rare books and manuscripts are fetched for readers through the vaulted Treasure Room below. At the east end of the Reading Room, beneath a replica of the memorial bust (opposite) in Holy Trinity Church at Stratford where Shakespeare lies buried, are the ashes of Henry Clay Folger and his wife Emily Jordan Folger (above), founders of the Library and avid collectors for nearly 50 years.

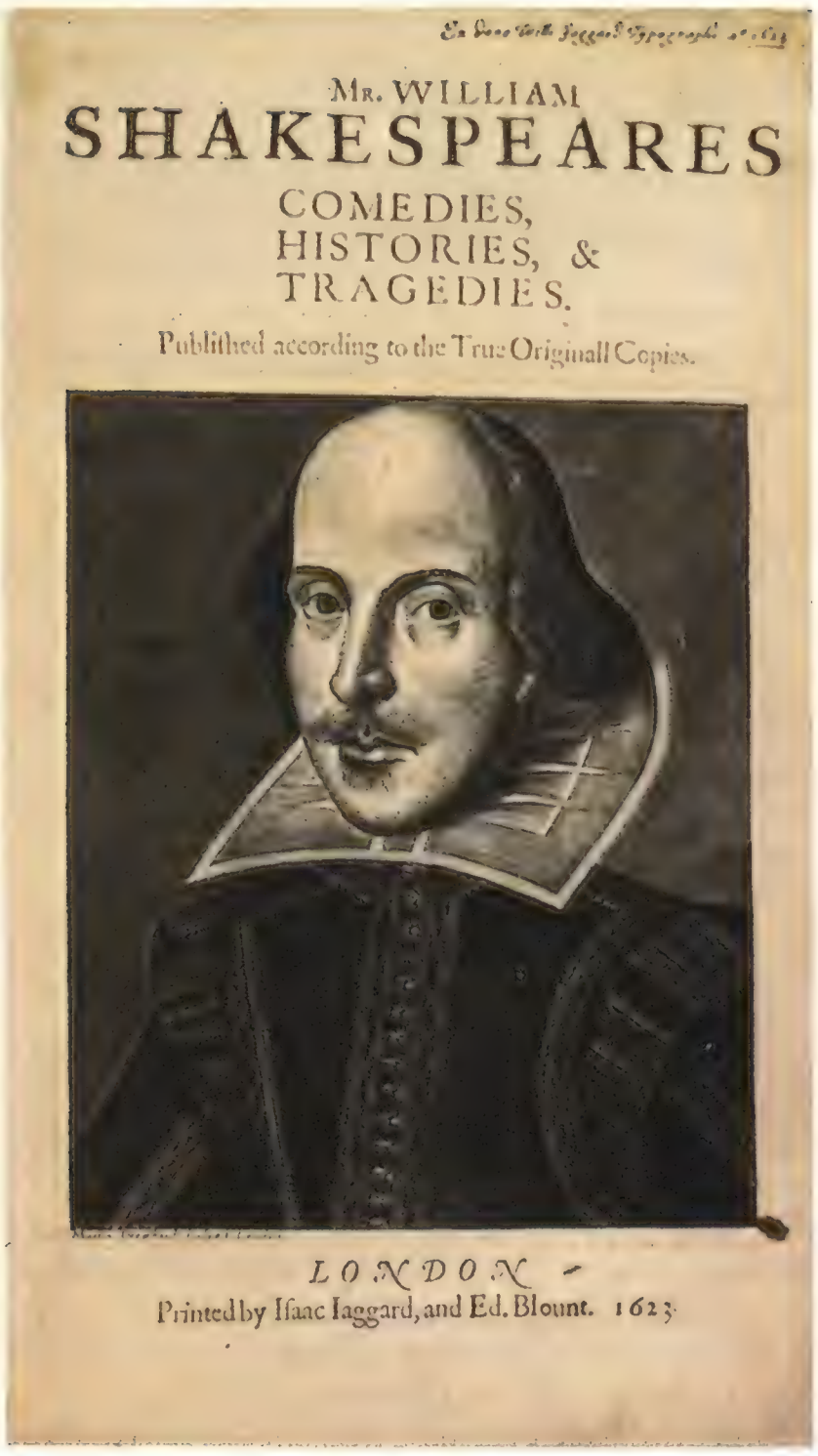
How did their bequest come to pass? Henry Clay was not a Folger of "mountain-grown" coffee fame (although he was certainly related to that branch of the family), but the eighth lineal descendant of a transplanted Englishman who settled in Nantucket, taught school in Martha's Vineyard and on Sundays preached to the Indians in their native tongue. Cotton Mather, who presumably knew whereof he spoke, described Peter Folger as "able, godly" and "well learned in the Scripture." Peter's daughter Abiah was Benjamin Franklin's mother.

Born in Brooklyn in 1857, Henry Clay Folger was the son of a moderately well-to-do wholesale milliner. He attended Amherst College, but when his father went broke in the Panic of 1876, Henry nearly had to drop out in his sophomore year. The generosity of a classmate, Charles M. Pratt, turned the tide for him. "You are like a son to us," Pratt's father, who had an oil company, confided in Henry, "so we will finance your education, and after graduation, you will have a job with the Pratt Company, if you want it." He wanted it.

Before then, though, he had an experience as momentous as it was unexpected. As a senior in the spring of 1879 he paid 25 cents to hear Ralph Waldo Emerson give his last address at Amherst. The great man, heavy with years, and with a daughter standing by on the platform to assist him if he faltered, seemed to be reading to himself. It didn't matter; young Folger was enormously moved. He procured Emerson's essay "On the Tercentenary of Shakespeare's Birth," and took to heart the Transcendentalist's tribute to the Bard as "the consoler of our mortal condition." Six years later, Folger paid $1.25 for a collected edition of Shakespeare's works. In 1889, for $107.50 payable in installments, he bought a copy of the Fourth (and last) Folio [1685]. This was his first rarity, and the beginning of the incredible Folger Shakespeare collection.

A collector of a different ilk

His business career went hand in hand with the collecting. After Amherst, Folger took a job as a lowly clerk with the Pratt Company, meanwhile pursuing a law degree at Columbia University, and passing the New York Bar. When Pratt joined forces with John D. Rockefeller sr., Folger made the oil connection in the predawn of the automotive age. In 1891 *Chambers's Encyclopaedia* asked him to contribute, for a fee of $30, the article on petroleum. Being an author in his own right evidently brought Folger gratification: he sent an offprint to Merrill E. Gates, the president of Amherst, who responded with an appreciative


Mr. WILLIAM
SHAKESPEARES
COMEDIES,
HISTORIES, &
TRAGEDIES.
Published according to the True Originall Copies.
LONDON
Printed by Isaac Iaggard, and Ed. Blount. 1623.

Among precious holdings of Folger is the Vincent Folio, published seven years after Shakespeare's death.

letter saying he would be glad to hear of all his alumni's future successes. Succeed Folger did. In time he became (after the dissolution of the Standard Oil trust in 1911) president and later chairman of the board of Standard Oil of New York, as well as secretary and a director of Standard Oil of New Jersey. During his tenure the company's profits increased tenfold. Folger was a captain of industry in an age of tycoons.

Many of his confreres, suddenly flush with great wealth, collected voraciously, often indiscriminately, jewelry, books, Old Masters—you name it. They crossed the ocean in style, bedded down with their retinues in luxury hotels, and ostentatiously signaled their bids from the auction floor. Folger's was a different style. Modest and shy, this deeply religious man who loved music made the transatlantic journey many times by the S.S. *Minnehaha*, no superliner. His favorite shipboard reading was *The Tempest*. Always accompanying him on his collecting forays was his wife Emily, an enthusiastic coconspirator. They had no children; books, lovingly assembled, became their offspring. Shunning publicity, they used agents to enter their bids secretly. "If I could only find out what Folger does *not* have," a chagrined dealer complained, "I could become the richest man in the book trade."

Rockefeller worried about his foolishness

Folger was a passionate golfer, and the story is told of him walking off the green with (who else?) John D. Rockefeller, and being softly sounded out: "Henry, I see from the papers that you just paid $100,000 for a book." After recovering from a sinking feeling in the pit of his stomach, Folger came back quickly: "Now, John! You know better than anybody else how newspapers exaggerate, especially about things like that. If you buy something for $10,000, it becomes $100,000 in print." Pause. "Well," said Rockefeller, "I'm glad to hear you say that, Henry. We—that is, my son and I and the Board of Directors—were disturbed. We wouldn't want to think that the president of one of our major companies would be the kind of man foolish enough to pay $100,000 for a book!"

On an undated scrap that I found among Folger's personal papers at the Library, I came upon this collector's credo hastily scrawled in pencil: "Don't try to tell me that if you are sufficiently determined—devoted, eager to the point of making any sacrifice to attain your aim—you cannot buy the costliest treasure even though you have no means. Don't try to tell me that—I know better. I have done it—not once only, but over & over again. Nothing is *impossible* if one is sufficiently in earnest."

So it proved for Folger. Among his greatest coups was acquiring the 1594 first edition of *Titus An-*

dronicus, that brutal cavalcade of rape, mutilation, slaughter and cannibalism—Shakespeare's youthful experiment with Roman tragedy, the opposite side of the coin from *The Comedy of Errors,* his youthful experiment with Roman comedy. Nobody would claim that the play is in a league with *Julius Caesar* and *Coriolanus,* although in modern times it has been revived successfully more than once. The glory of Folger's purchase resides in the fact that this vulnerably delicate little book is the only known copy of the 1594 edition—an edition which differs significantly from those that followed. It is an essential determinant of our idea of *Titus.*

A first edition of Titus *for $10,000*

Recently, while in Lund, Sweden, where I lectured at the university, I was taken to the Grand Hotel for a splendid celebratory dinner. Between *skoals,* as the aquavit flowed and the piano player rendered *As Time Goes By* (my favorite grand-hotel tune), my host remarked, "You know that copy of *Titus*—it was here in Lund once." Indeed so; it had turned up there mysteriously in 1904, in the attic of a postal clerk of Scottish extraction, and was deposited for safekeeping with the librarian of Lund University. Folger caught the terse announcement of the discovery in the *New York Times,* and cabled his London agent, who had his representative show up, cash in hand, in Sweden in time to beat out the other eager bidders. It took Folger all of three hours to come up with a winning figure; within days, dealers were bidding ten times his £2,000 (some $10,000) for the book.

But what about all those 79 copies of the 1623 First Folio? Did the Folgers have any real idea of the scholarly significance of their collection, or did their purchases merely signify the prophetic good luck of people who were very lucky all their lifetime? In fact, Mrs. Folger did grasp the importance of multiple copies, for she was a trained student of literature. The daughter of the Solicitor of the Treasury under Abraham Lincoln (and also under President Andrew Johnson), Emily Jordan as a little girl—no more than four—met Lincoln at the White House, an experience she never got over. She was graduated from Vassar College and, some years after her marriage, returned to take a postgraduate degree there. As her thesis topic she offered "The True Text of Shakespeare"; she understood very well that during the printing of the Folio the presses were stopped from time to time to make the minute textual differences that exist among the various copies.

Together the Folgers single-mindedly pursued their avocation; they possessed books, and books possessed them. Among Emily's papers at the Folger are draft articles posing questions that interested her—"Was

The Folger, with its vast collections, annually lures hundreds of readers from here and abroad.

Reading Room window has figures from "Seven Ages of Man" speech in *As You Like It*; here is Pantaloon.

O. B. Hardison jr., Folger's director since 1969, is authority on medieval drama, Renaissance literature.

Shakespeare an Aristocrat?," "Was Cleopatra a Serpent of Old Nile?"—and a privately printed paper answered in the affirmative another query, "Did Not Shakespeare Write Shakespeare?" Henry's capsule biography in *American Men of Mark* classifies him, not inaccurately, as "Capitalist," and credits him, with poignant overstatement, with having "written many monographs on Shakespeare." *Atlantic Monthly* and *Harper's* politely turned down his piece on "The Most Precious Book in the World" (the Vincent copy of the First Folio), but Folger managed to place it in *The Outlook,* a monthly magazine. With "Shylock versus Antonio," which the curious reader may consult in typescript at the Library, he struck out altogether; even *The Outlook* said no to this one. He toyed with publishing a volume of his own Shakespearean essays, but nothing came of the idea. Instead, Folger founded the great institution which exists to further the scholarly researches of countless other enthusiasts.

The choice of a site was no foregone conclusion. Folger considered his old alma mater, several major university campuses and Stratford. His wife's Washington ties were to play a role in the decision, as would what was happening in the city—"Forty years ago I would have said no," an adviser allowed, "but now I say yes." Folger's funeral eulogist, the Reverend Samuel Parkes Cadman, recalls asking him why not Stratford, and Folger's reply: "I did think of placing the Library at Stratford, near the home of the great man himself, but I finally concluded I would give it to Washington, for I am an American."

Accordingly, in his will he devised that, through a fund set up for the purpose, the trustees of Amherst College should install and administer his Shakespeare collection "as a permanent library in a building in the city. . . ." For that purpose Folger had prudently acquired a suitable parcel of land on Capitol Hill. The cornerstone of the Library was laid in June 1930. Within two weeks, Folger was dead of heart failure following surgery; his wife would live on for another six years, long enough to attend the dedication on April 23, 1932—the day when Shakespeare's birthday is celebrated—in the depths of the Great Depression. President Herbert Hoover was the guest of honor.

The items which the Folgers had examined in their home on Brooklyn Heights, or in Henry's Manhattan office, and which they both had carefully catalogued, were then packed away for safekeeping in fireproof warehouses. Only they knew the scale and quality of the collection. By the time Folger died he had laid away close to 3,000 cases. Transporting them by truck, and unpacking them at the Library, took six months. They contained 93,000 books (including 208 early Quartos of Shakespeare's plays and poems), 50,000 prints, watercolors and engravings, and 250,000 Shakespearean playbills—not to mention 200 oil paintings.

The inventory would not remain static; Folger had provided for subsequent growth, and additional funding would be sought to that end. In 1938 the Library's holdings were augmented by another purchase, the collection of Sir Leicester Harmsworth, a powerful British newspaper magnate, who had gathered together 9,000 titles printed before the mid-17th century. Sir Leicester's widow parted with the bulk of the collection to escape death duties and because she found attractive the idea of an American home for the books. Continental as well as English works have since swelled the store: 1,000 Italian 16th-century plays and at least 950 Reformation works, including a rare edition of Martin Luther's 95 theses.

For homework: a weekly wonder

Some years ago, when I was conducting a seminar at the Folger, I asked each student, as a weekly assignment, to come up with a wonder from the collection. Through the ten weeks the course ran, nobody complained that the assignment was unreasonable. For purposes of illustration, I here limit myself to a random gathering of Seven Wonders of the Folger. The Library holds the late-medieval manuscript *The Castle of Perseverance,* a morality play with a cast of personified abstractions including Mankind and the Seven Deadly Sins. Another unique manuscript is the anonymous Cambridge University play, c. 1603, *The Progress to Parnassus,* with its references, by name, to

J&B. It whispers.

86 Proof Blended Scotch Whisky. ©1981 The Paddington Corp., NY

Shakespeare. Also in the collection is a splendid copy of William Caxton's edition of Chaucer's *Canterbury Tales*, one of the first books printed in England. Another treasure is a Book of Hours presented to Henry VIII by his fourth wife, Anne of Cleves, and inscribed by her; also a Bible once owned by Queen Elizabeth I, and decorated with silver clasps and bosses bearing her monogram, her coat of arms and Tudor roses. There is Shakespeare's own copy of the deed to the Blackfriars Gatehouse, the London property he bought in 1613. And the Folger has 16 volumes of *Note Books* of the Reverend John Ward, the vicar of Stratford from 1662 until his death in 1681.

To Ward, who was licensed to practice medicine by the Archbishop of Canterbury, and who knew the poet's daughter Judith, we attribute the report—otherwise unsubstantiated but not implausible—that "Shakespeare, Drayton and Ben Jonson had a merry meeting, and it seems drank too hard, for Shakespeare died of a fever there contracted."

All seven of these wonders, plus the Vincent Folio, the *Titus Andronicus* Quarto and a host of other treasures, are temporarily away from the Library as part of "Shakespeare: The Globe and the World," the great traveling Folger road show. It opened in San Francisco two years ago, then crossed the country to New York after intermediate stops in Kansas City, Pittsburgh, Dallas and Atlanta; recently it completed a return California engagement in Los Angeles. Come June, it will have a grand windup at the Kennedy Center in Washington, D.C., where it will lure visitors until after Labor Day. The exhibition forms part of the Library's enlightened outreach program, the brainchild of its director, O. B. Hardison jr. (p. 124).

The Folger Theatre, along the east side of the building, is an intimate house with a 200-plus capacity (opposite). The three-tiered gallery surrounding the pit, and the two supporting stage pillars, as well as an upper stage, suggest the open-air playhouse of Shakespeare's age. Here the award-winning Folger Theatre Group holds its annual season of plays. This year the Birthday production will be, appropriately, *The Tempest*. Other attractions open to the public include poetry readings, symposia and lectures by renowned scholars, as well as concerts by the resident early-music ensemble, the Folger Consort.

"Share the fantasy," beckons a TV ad. Let me share with you a Shakespearean fantasy I have entertained. I am in Amsterdam, in a little bookshop tucked away on a side street, and come upon a little quarto copy of *Love's Labour's Won*. Such a title was included among Shakespeare's comedies in 1598 by Francis Meres, in a rare publication entitled *Palladis Tamia*, of which the Folger has three copies; but the play itself has never surfaced, although it is mentioned in an old bookseller's list that turned up not too long ago. Maybe the play never really did exist, but was an alternative title for one of Shakespeare's extant comedies, in which love's labor is usually won. Never mind; in fantasy all things are possible. I buy the book for a ridiculously low sum (the dealer, poor fellow, doesn't realize its value—the most unlikely ingredient of this pipe dream), and slip it past customs. Then I present the book anonymously to the Folger Library, where it becomes another wonder of which the founder would have been exceedingly proud, for he would have appreciated its significance.

Mark Antony mourns assassinated Caesar in recent production of acclaimed Folger Theatre Group.

Rebecca Nelson, John Waite rehearse scene from *The Rover*, a Restoration comedy, in Folger Theatre.

ALL THE WORLD'S A STAGE
AND ALL THE MEN AND
WOMEN MERELY PLAYERS

A poignant sequel about giraffes

A stouthearted mother takes on a pride of marauding lions in a courageous attempt to save the life of wounded infant

As a lioness skulks toward them, mother giraffe stands guard above her wounded youngster.

In January SMITHSONIAN published an article by Dr. Vaughan A. Langman showing that, contrary to long-held belief, giraffes are indeed good mothers. In response, Virginia Erwin of Severna Park, Maryland, wrote us of an experience she, her mother and two sisters had had on safari in Kenya. Her letter poignantly confirmed Dr. Langman's research.

"We set out from our camp at Kichwa Tambo and stumbled upon a dramatic and heartbreaking confrontation," she told us. "As our Land Rover surmounted a slight rise on the Masi Mara Game Preserve west of Nairobi, far off, in the early morning light, was a strange sight—a lone giraffe among what appeared to be lions. We drove over to investigate."

The reason for the female giraffe's unusual immobility in the face of predators soon became clear. She was straddling her two-day-old baby while standing off a pride of lions. "There must have been a dozen, including one splendid male. We thought the little giraffe was dead, but could see through our binoculars it was still breathing." It had been attacked and was bleeding from a neck wound. The mother urged it to its feet, cradled it between her forelegs, then turned, encouraging it to follow. It wobbled and sank to the ground. The lions closed in. "That mother wheeled in a flash, head down and hooves flailing. She charged right into the lions and kicked them off."

As the four women watched apprehensively for more than an hour, the scene was repeated again and again. Finally, the tiny giraffe collapsed for the last time. "We couldn't bear to watch any longer. Hours later, as we returned to camp, that mother was still wandering disconsolately about the feasting lions."

These rare views of the life-and-death struggle were snapped by Mrs. Erwin and her sister Marjorie McDaniel.

Beating attacking lion with powerful hooves, mother drives it off while keeping remainder of pride at bay.

Having got the infant to its feet, the mother leans over it solicitiously, keeping a wary eye for lions.

When she tries to get the little one to follow, lion creeps forward and giraffe wheels to the fray.

At last she knows she has lost. "We all wept. That mother was nothing short of noble," said Mrs. Erwin.

Courtesy of National Portrait Gallery, London

By Dorothy Geary

Founding Singapore capped an empire builder's great dream

Heady triumphs and maddening reverses marked Sir Stamford Raffles' career with an ungrateful East India Company

Bustling Singapore, a city of 2.6 million today, was a mere 500 when Raffles made "coup of the century."

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He has been called a schemer, an intriguer and an opportunist. He has been praised as a humanitarian, a visionary and hailed as a historical figure, ranking with other famous men of his time: Pitt, Napoleon, Nelson and Wellington. He was, like all complex men, the sum of these qualities—qualities that finally brought him honor in England as a pioneering entrepreneur, naturalist and enlightened governor.

G. F. Joseph painted this portrait in 1817, the year Thomas Stamford Raffles was knighted at age 35.

Tom Raffles was born at sea, aboard a West Indiaman, a merchant ship, captained by his father. The family lived in England during Tom's early years, although exactly where is uncertain. Adverse family fortunes and the early death of his father forced Tom to leave school and look for work. As a scrawny boy of 14 he found a job as a clerk at the East India Company, "drudging for a guinea a week." Having to leave school was a bitter blow, for Tom had a passionate longing for knowledge. He devised a plan for educating himself, resolving to "appropriate eight hours of each day to study, reading, or writing, and the loss of time on any day should be made up in another." He followed a regimen of study all his life, and became one of the best-informed men of his time.

The East India Company, Tom's employer, was chartered by Queen Elizabeth I, and had through the

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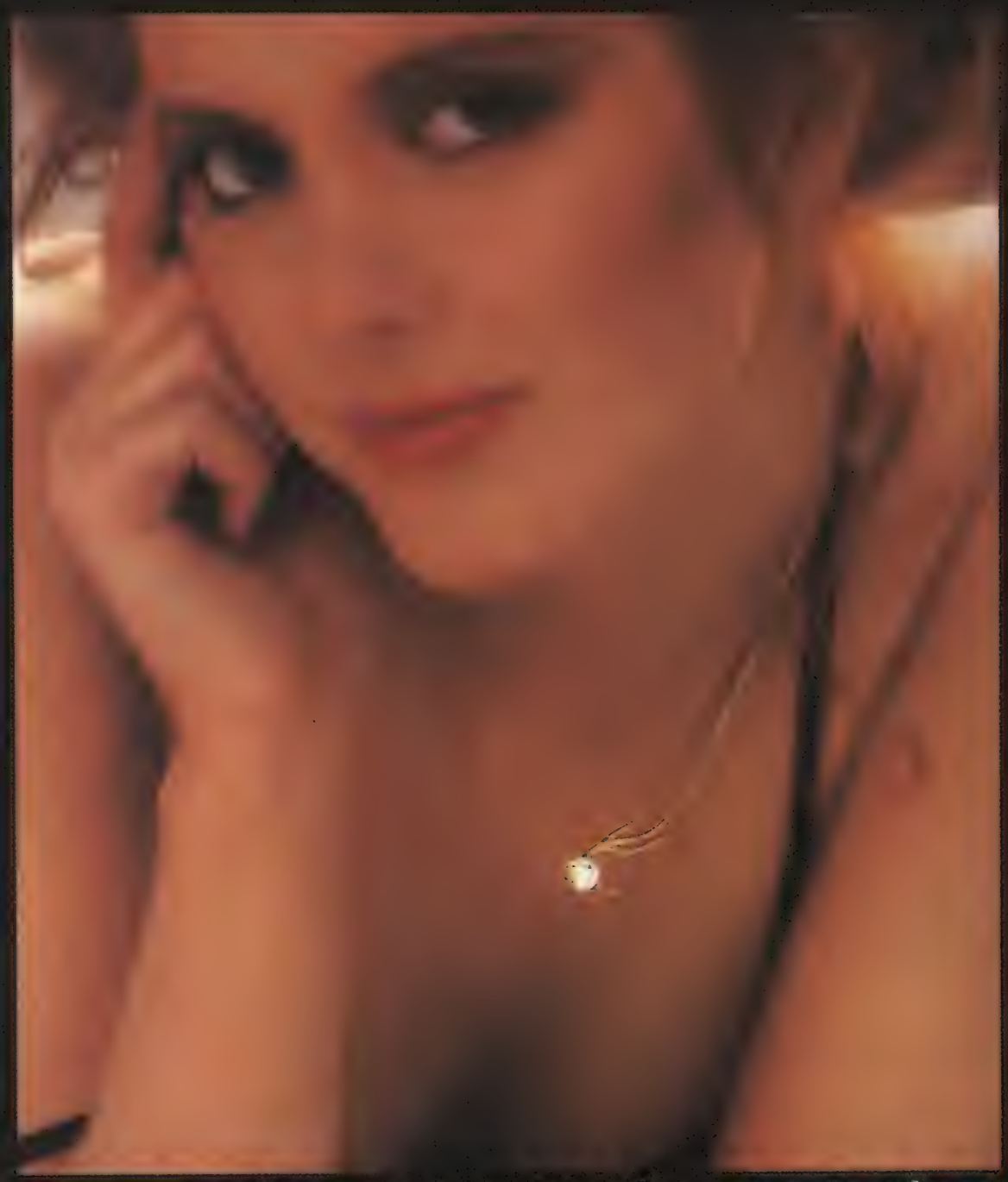
In writing later about the early phase of his life he called himself "a willing horse" and then added: "The diligence, and perhaps fitness, which I evinced attracted considerable attention." No false modesty in Tom. He caught the eye of his chief, William Ramsay, who admired the youth's energy and intelligence. In 1805, when Raffles was 24 years old, he chose him over dozens of other clerks for a position as an assistant secretary on Penang Island, a company possession off the western coast of the Malay Peninsula. There was a titillating rumor going round the halls of the East India Company that Tom Raffles had been awarded the position in Penang by Ramsay for consenting to marry one Olivia Fancourt, a lively beauty ten years his senior, part Circassian and part Irish, and Ramsay's discarded mistress.

Thomas Raffles and his new bride sailed to Penang from London with Penang's new governor, Philip Dundas, and his staff in the spring of 1805. The voyage around the Cape of Good Hope and across the Indian Ocean took nearly six months. Realizing that none of the new staff spoke Malay, Raffles, more the opportunist than the ardent bridegroom, spent many hours of the voyage teaching himself to read and speak Malay.

Penang Island held a strategic position at the head of the Straits of Malacca, and though the straits were used by the company's China fleet, the island had been neglected by the East India Company for almost 20 years. But now, with Napoleon occupying Holland, and the French swarming all over the territories of

Dorothy Geary last wrote an article for SMITHSONIAN, *in September 1979, on the Asian conqueror, Tamerlane.*



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the Dutch East Indies, the company was fortifying Penang and setting it up as a presidency, answerable to the Governor-General of India.

The Malays, a happy, gentle people, courteous and rather reserved, excited Raffles' intense interest. He plunged into research in the virtually unexplored fields of Malayan history, culture, art and religion, and renewed his study of their language. His industry and knowledge of Malay enabled him to move easily from assistant secretary to chief secretary, with the added job of interpreter.

It became apparent that Penang was not the salubrious haven the company had supposed. Malaria, dysentery and "putrid fevers" were ever present. Between 1807 and 1819 five Penang governors died, among them Governor Dundas, along with his wife, council members and many of the settlers.

Toward the end of 1807 Raffles himself fell ill and was sent to Malacca to recuperate. Here he devised a plan for the East India Company, proposing that if Britain retained Malacca "the whole of the Malay Rajahs in the Straits and to the Eastward might be rendered not only subservient, but, if necessary, tributary." When Raffles' letter passed through the hands of Lord Minto, Governor-General of India (p. 136), he was impressed.

By 1810, Raffles had been appointed to the Governor-General's staff with the responsibility for preparing the way for a naval and land invasion of Java, a Dutch colony then under French control. His preparation for the invasion covered a period of six months, during which he set up a spy network and made reports to Lord Minto.

Aside from laying down his plans for the Java invasion, Raffles began an extensive collecting program in Malacca, acquiring specimens of everything from herbs to insects, to wild animals and birds. Everything was sent to the Oriental Museum of the East India Company in London.

On June 11, 1811, the invasion fleet sailed from Malacca and, after a seven-week voyage, landed some ten miles east of Batavia (now Jakarta, the capital of Indonesia). In less than a month the Franco-Dutch forces collapsed. Lord Minto proclaimed Raffles Lieutenant-Governor of Java. So at age 30 Thomas Stamford Raffles became ruler of five million people.

Old Batavia, from a 1750 watercolor by J. Van Ryne, was capital of Java, where Raffles ruled five million people.

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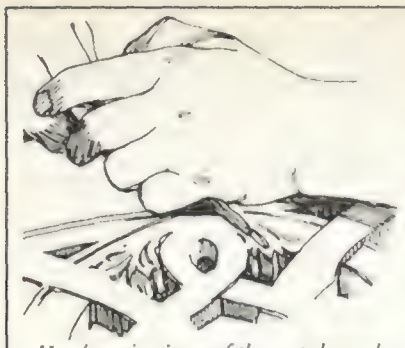

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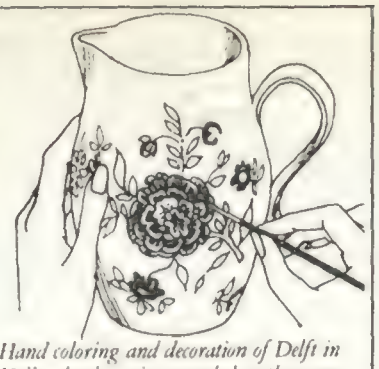

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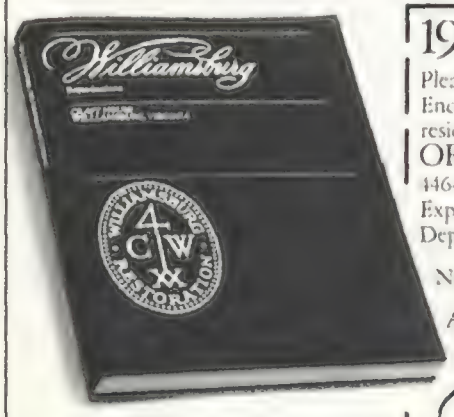

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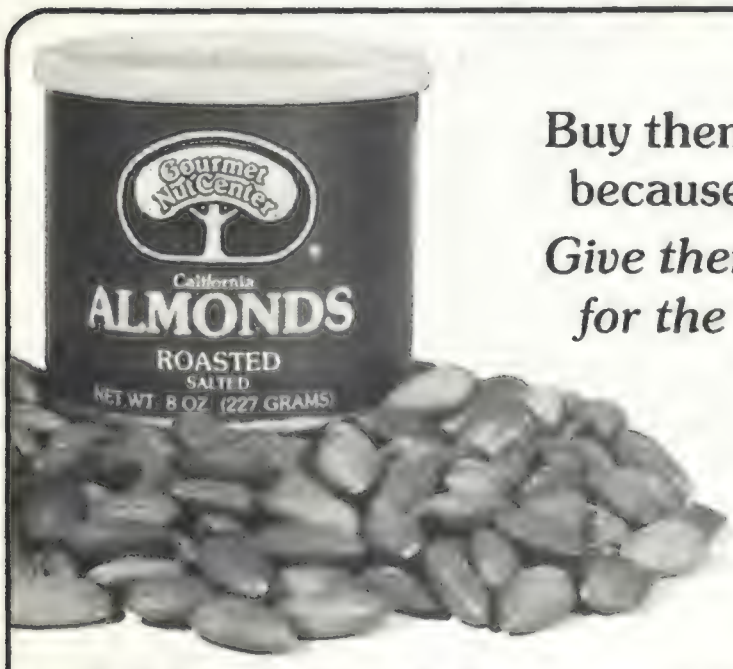
Courtesy of National Gallery, London

Earl of Minto, the Governor-General of India, backed Raffles' Eastward quest.

Almost immediately Raffles embarked on a series of sweeping reforms. He began by abolishing the harsh system of government, which had been instituted by the Dutch. No longer were wrongdoers punished by torture or mutilation. Courts of justice were set up and offenders were tried by jury. No more were merchant ships forced into port and compelled to sell their goods at a set price. Traffic in slavery was abolished. Raffles' reforms in land tenure and taxation freed native growers from the compulsory growing of crops for the benefit of their Dutch masters. Instead they could grow anything they liked—rice, coffee, fruit, spices—and sell them on the open market.

At the end of a year governing, Raffles' administration was in deep financial trouble. To raise funds he auctioned off some government lands. Then he reduced costs by replacing British troops with sepoys, these native Indian soldiers being cheaper to maintain. That was when he ran afoul of Major-General Robert Rollo Gillespie. The General, angry over the reduction of the army and jealous of Raffles' authority, filed charges accusing Raffles of incompetence and of profiting from the land auction.



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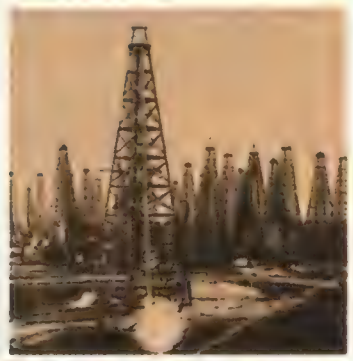

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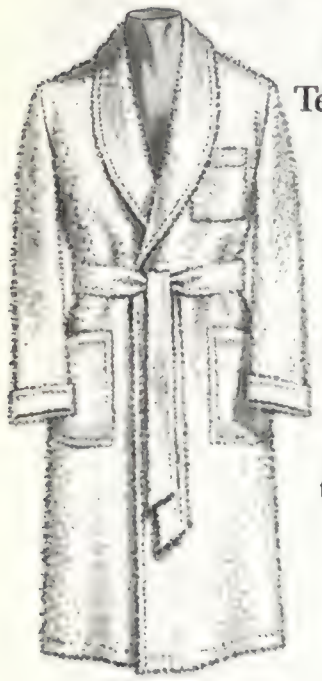

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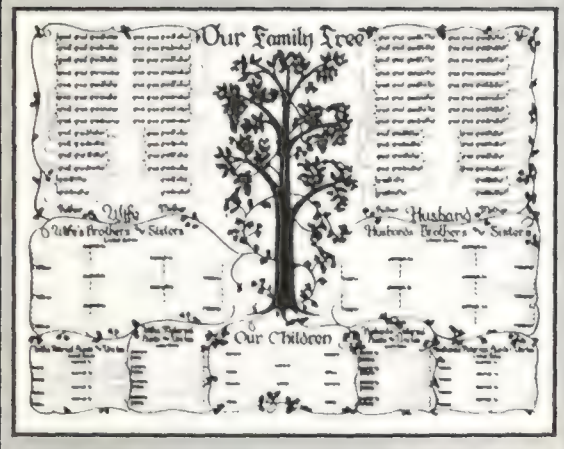

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Ronggen, or dancing girl, appears in Raffles' detailed account, *History of Java*.

On November 26, 1814, Raffles received a heavy blow: Olivia died. She was only 43. He was bereft, "a lone and stricken man." He had loved her deeply. The gossip about his appointment in Penang for consenting to marry her as a favor to his old boss, William Ramsay, had never reached his ears. When he finally did hear it, his beloved Olivia had been dead five years. Indignant, he felt compelled to write to his cousin: "My first wife was in no manner connected with Mr. Ramsay; they never saw each other. . . . The account must, I think, have been inserted by some pitiful enemy."

After Olivia's death Raffles' health and spirit broke and for weeks he lay near death himself. There was still no word from London on Gillespie's charges. He turned more and more to his scientific studies in archaeology, zoology and botany. He sent off another shipment of biological specimens to London. Every sultan was asked to write the history of his domain for a history of Java, which Raffles was compiling.

As Raffles' boundless physical energy returned he began planning a mountain-climbing trek with friends. He climbed Gunung Gede, the 7,000-foot peak towering over the town of Buitenzorg. It was the first time the mountain had been scaled by Europeans. On another foray, tracking down ancient sites, Raffles explored Borobudur, a massive Buddhist monument in the deep jungle near Jogyakarta (SMITHSONIAN, June 1973).

After Raffles returned from his exploration he learned of Napoleon's defeat at Waterloo and of Java's being restored to the Dutch. And, in January 1816, almost two years after the Gillespie charges were brought against him, Raffles received a letter bearing more bad news. The Court of Directors of the East India Company had ruled that he was to be superseded. The letter absolved him from any dishonesty, but was "so phrased that acquittal had been dealt out with a sparing and doubtful hand." Since his moral character was not implicated, he would be given a new position as Resident of Bencoolen, a half-forgotten British port off the southwestern coast of Sumatra.

Defeated and ill again, Raffles left Java for London in March 1816 aboard the *Ganges*, the same ship that had brought him to Penang 11 years

Javan in War Dress is also from *History*, which Raffles dedicated to Prince Regent.

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Temple on mountain of Dieng was the kind of place Raffles liked to explore.

before. He hoped to regain his health as well as his reputation.

On the day of his departure from Java, the harbor was filled with well-wishers—the Dutch colonists, the British staff and tearful Javanese, to whom he had given a taste of liberty. Lashed down below deck was Raffles' scientific collection, 30 tons of it.

Raffles arrived in England in July 1816. During his 16 months' stay his health and spirits revived. At Cheltenham, the fashionable spa near London, he made the acquaintance of the Hull family of County Down, Ireland, and particularly the daughter, Sophia. She was 30 years old and so, by the standards of the time, well nigh a maiden lady. Thomas Stamford Raffles, who had arrived at the spa with an impressive entourage, including a Javanese nobleman, was 36. He looked interestingly wan, with an air of the mysterious East about him, though he described himself as "wretchedly thin and sallow with a jaundiced eye and a shapeless leg." Sophia fell in love with him and seven months later they were married.

Social and scientific triumphs

Myth:

19th-century land grants are 20th-century subsidies for freight railroads.

"May God continue the unity of our Country as this Railroad unites the two great Oceans of the world."

Golden Spike courtesy of the Stanford University Museum of Art.

Fact:

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Farsighted government investments called "Land Grants" made it possible. But the myth persists they were gifts. In fact, they were sound, hard-driven business investments in the future of a nation. And, for nearly 100 years, the U.S. Government and taxpayers earned a high rate of return on those investments in the form of greatly reduced rail rates. Railroads were required to transport government personnel and freight at 50 percent of established rates, and mail at 80 percent. This included the massive numbers of troops and unprecedented freight volume carried during World War II.

By the time the reduced rate provisions of the land grant acts finally were repealed in 1946, the debt had been repaid by a sum nearly 10 times the original value of the land, according to government estimates. Furthermore, less than 8 percent of today's rail mileage stems from thóse long-ago land grants.

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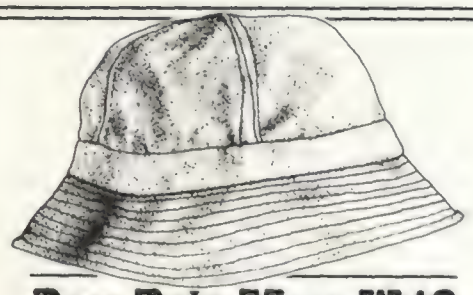

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awaited Raffles when he arrived in London. He was made a Fellow of the prestigious Royal Society and his portrait, which was hung in the National Portrait Gallery in London, was done by G. F. Joseph (p. 130). During his stay he completed the monumental two-volume *History of Java* and it won high acclaim. At a grand soiree on May 29, 1817, the Prince Regent made Raffles a knight.

And, finally, the East India Company, which had taken little notice of Raffles' achievements, sent him a letter formally acquitting him of the charges brought against him in Java three and a half years before. His title in Bencoolen was upgraded from Resident to Lieutenant-Governor.

The 14,000-mile voyage to Bencoolen took four months. On the way Sophia gave birth to a baby girl. Just before Raffles and his staff arrived at his new post a series of violent earthquakes had devastated the area; there was hardly a building left standing. Writing to a friend in England, Raffles declared: "This is without exception the most wretched place I ever beheld. I cannot convey to you the state of ruin and dilapidation which surrounds me. . . ."

With a crusader's zeal, and totally without any authority, Raffles plunged into dramatic reforms. He freed hundreds of company-owned African slaves and provided for the old and sick among them. India had been using Bencoolen as a penal colony. Raffles classified the felons, more than 500 of them, and allowed most of them the right to earn money, marry and own property. Schools and missions were established and, as in Java, he abolished forced cultivation. It was at this time that, exploring the hinterlands, he discovered the extraordinary flower—purple, yellow, red and white—later named the *Rafflesia arnoldi*, and considered the largest flower in the world (p. 146).

It became clear to Raffles that in order to secure his country's trade within the Dutch sphere of influence, the British needed a port more strategically placed than either Penang or Bencoolen. Raffles favored Singapore Island, located on the southern tip of the Malay Peninsula and ruled by the Sultan of Johore.

The island was small, measuring only 26 miles wide and 14 miles long, with an excellent harbor. It had been the site of the Hindu-Buddhist walled city of Singhapura, meaning in Sanskrit, City of the Lion or Holy City of Lord Vishnu, a chief deity of the Hindus. After the city fell into ruins at the end of the 14th century, the island had remained unoccupied, except for foraging pirates and a few fishermen. Sitting astride the passage-

This tranquil view of Singapore in 1828 shows island as it was shortly after Raffles planted flag there.

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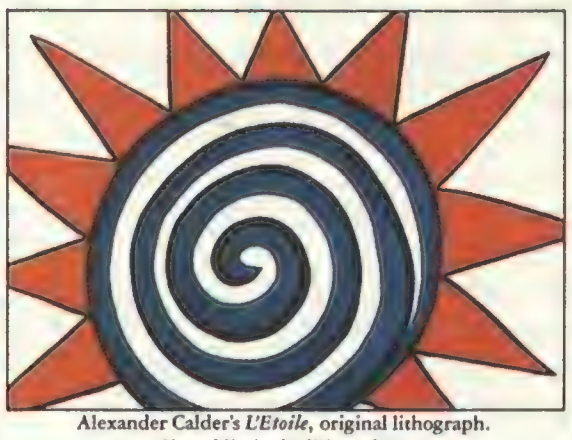

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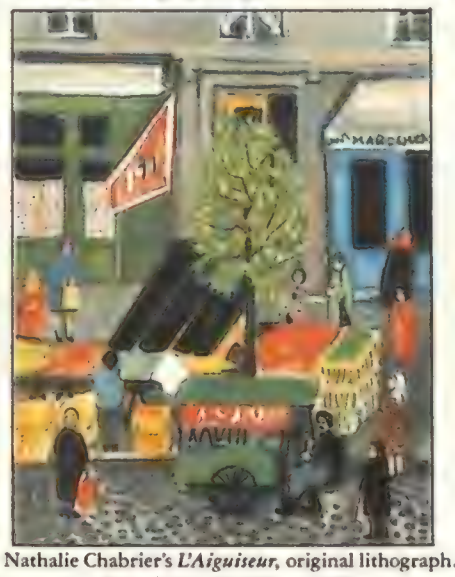

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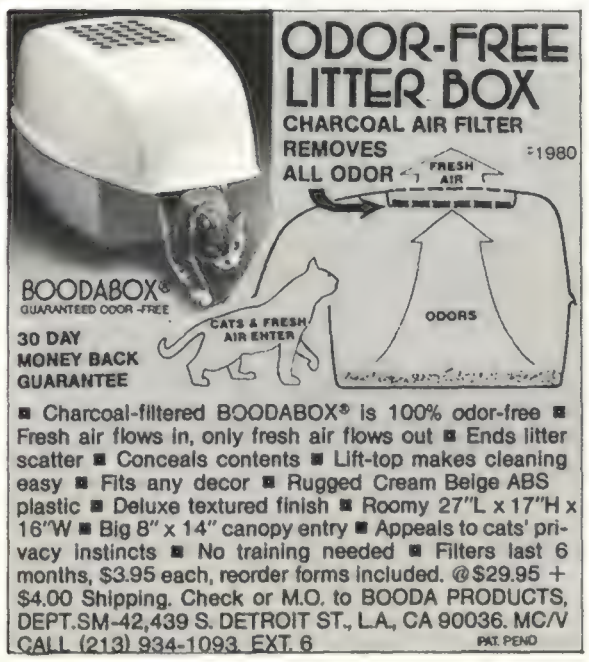

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way between the Indian and Pacific oceans it would afford the shortest route between Europe and China.

Raffles sailed to Calcutta and gained the blessings and support of the Governor-General, Lord Hastings, for the Singapore venture. And so it was that on the morning of January 29, 1819, six ships under the overall command of Sir Stamford Raffles lay anchored off the southeastern tip of Singapore Island. Quick consultations with the Sultan of Johore confirmed that the Dutch were not in possession of the island. After day-long negotiations, Raffles signed a treaty with the sultan, giving the British the right to establish a settlement on the island. The sultan in return would receive 5,000 Spanish dollars a year and British protection. By nightfall the Union Jack was planted on the barren beach. With only 340 sepoys and one hundred sailors Raffles had brought off what was later called the "greatest political and commercial coup of the century."

Raffles proclaimed "the port of Singapore is a free port and the trade thereof is open to ships and vessels of every nation free of duty, equally and alike to all." The island had 500 inhabitants, most of them living on their boats, when Raffles landed there. Fewer than four months later, Sir Stamford reported to a friend in London: "Already a population of about five thousand souls has collected under our flag. . . . The harbor is filled with shipping from all quarters. . . ."

Back in Bencoolen he impatiently waited for London's reaction to the founding of the port and prayed he would not be robbed of what he called his "political child." A year after the founding of Singapore, the Court of Directors of the East India Company, certainly influenced by the commercial success of the port, gave the project its grudging approval.

In her *Memoir,* Sophia wrote of this rare time of contentment in her husband's life. He was 39 years old, a young man. But he had been in the

A message from one of the nation's leading authorities on utility finance . . .

ELECTRICITY USERS WILL PAY FOR ADVERSE REGULATION

By Eugene M. Lerner

Professor of Finance, Northwestern University Graduate School of Management

During nearly 30 years in education, Eugene M. Lerner has provided expert testimony before legislative committees and regulatory agencies on national and state levels, has authored or contributed to 28 books, and has written more than 50 articles for leading financial, economic and management publications.

Tomorrow's electricity consumer probably will pay higher than necessary costs for poorer service — the inevitable result of the shortsighted regulation of electric utilities that prevails in many states.

Consumer ultimately pays

Future costs and quality of service depend upon the ability of electric utilities to finance new facilities and equipment now. To attract the capital required, utilities must be able to earn sufficient amounts to provide a fair return to investors after actual operating costs have been defrayed.

Unfortunately, the returns permitted by most state regulatory commissions today are below those offered by competitive, relatively safer investments. Actual returns are even lower. As a result, many utilities have had to cut back efforts to increase efficiency, convert to lower cost fuel, and develop new generating technology. When they do undertake such programs, they often must pay premium rates for funds. In either case, the consumer ultimately will pay.

In some states, regulators *are* taking action to protect the long-term interests of the community at large. At this time, there are nine states that, in my opinion, have a more reasonable regulatory climate than generally prevails. Their constructive regulatory policies include:

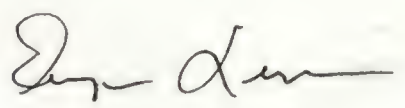
- **basing allowed returns on the rate base that will generate service when the rates become effective, not on some historical rate base;**
- **permitting the utility to apply tax benefits to equipment replacement and system expansion;**
- **including construction work in progress in the rate base, rather than delaying recovery of current financing costs;**
- **automatic rate adjustments for increased costs of some raw materials, instead of holding lengthy and expensive hearings;**
- **prompt rate decisions;**
- **setting allowed returns at levels comparable with those offered by competitive investments.**

My analysis shows that utilities in these states, because they are allowed to be financially healthy, can retain a significant portion of their earnings for reinvestment in the system while maintaining dividend payments to stockholders at adequate levels. Consequently, they not only can attract equity investors, but also offer greater safety to bondholders. Therefore, they can obtain funds on more favorable terms.

Financing costs significant

Financing costs are a significant factor in the rates utilities must charge their customers. Sooner or later, the consumer must pay the higher financing costs that financially weak utilities incur. An alternative is to delay necessary improvements, which will mean still higher costs in the future and possible deterioration of service.

As an important result of more favorable regulation, utility managements are able to make operating and investment decisions based on long-term public need, rather than on short-term financial exigencies. The nation as a whole is the beneficiary.



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East 15 years and knew his health would not bear more than a few more years in these climes. He also knew he would never realize his grandiose plans for a Far Eastern trade empire; but one great blow had been struck, Singapore, and he was finally at peace.

This tranquil, happy interlude was short-lived. In a period of six months Sophia and Raffles lost three of their four children. Only baby Ella was left. Accompanied by her nurse, she was sent home on the first available ship. Sophia, devastated by her grief, fell ill. Raffles, ravaged by blinding headaches from what was called brain fever, and with a heart "nigh broken," made a decision to resign his post. But he wanted to see Singapore one last time. He and Sophia arrived there on October 10, 1822.

They found a harbor filled with ships—ships from Siam, China, India and Europe. What had been an insignificant fishing village and haunt of pirates three and a half years ago had become a prosperous, bustling city of more than 10,000. In the streets Chinese traders and European merchants jostled Malay planters and seafaring Arabs. "Here all is life and activity," Raffles wrote. "It would be difficult to name a place on the face of the globe with brighter prospects or more present satisfaction."

Raffles and Sophia stayed in Singapore nine months. Though he was plagued intermittently with crushing headaches, it was the most creative period of Raffles' life. He drafted a constitution for Singapore, set up a registry of land and laid out streets, settling each race in its own section. Regarding justice he proclaimed: "Let all men be considered equal in the eye of the law. . . ." He founded the Singapore Institution, a college where local languages and traditions were taught.

Back in Bencoolen, Sophia and Raffles anxiously awaited a ship to take them to England. In September 1823, after she gave birth to her fifth child, Sophia's health deteriorated. The baby, a girl, lived only a few months. Raffles' headaches were now so severe that he lay prostrated for weeks at a time. During brief respites, he moved about weak and dispirited. Several members of his staff sickened and died. Months passed and still no ship appeared. Sophia wrote in her *Memoir* of this desperate period of waiting: "It is not easy to describe the anxiety . . . seeing hour after hour pass away without the means of escape and with scarcely a hope that life would be prolonged from one day to another."

Finally, in January 1824 a ship arrived, the *Fame*. Raffles, along with Sophia and his staff, eagerly boarded the ship. One day out the *Fame* caught fire. The crew and passengers escaped in lifeboats and returned to Bencoolen, but 122 cases of Raffles' precious scientific collection sank with the ship (pp. 148-149). Raffles wrote of his loss: "There was scarce an unknown animal, bird or fish or plant which we had not on board; a living tapir, a new species of tiger, splendid pheasants. All, all has perished." "Misfortune," declared Sophia, "seemed to have no other effect on Sir Stamford than to rouse him to

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greater exertion," for by the time another ship arrived in Bencoolen three months later, Raffles had a new collection to load on board.

London received him as a celebrity, not only for his Singapore coup, but as an Orientalist. He renewed his friendship with the members of the Royal Society and in 1825, with the support of the society, established the Zoological Gardens; thus the London Zoo was born and Raffles was named its first president.

On a farm he and Sophia had bought near London, Sir Stamford eagerly awaited the one accolade he had not received—some recognition from the East India Company. He had served them for 30 years, 19 of those years in the East. The money-grubbing company had never quite trusted this romantic visionary who put the establishment of British power and influence in the Eastern archipelago and the raising of the cultural and educational standards of a backward people above company profit. But now that Singapore was proving a raging commercial success surely he could expect recognition and a handsome position.

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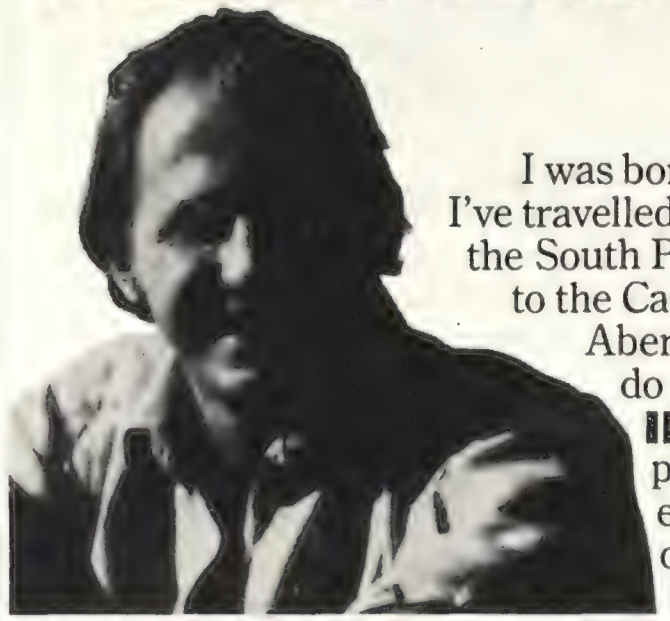

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Book reviews

Lewis Carroll's
The Hunting of the Snark
Illustrated by Henry Holiday
William Kaufmann, Inc., $18.95

Lewis Carroll: A Celebration
Edited by Edward Guiliano
Clarkson N. Potter, Inc., $17.95

Of the three major humorous works that Charles Lutwidge Dodgson—minister of the Church of England and lecturer in mathematics at Christ Church, Oxford—wrote for children under the pseudonym of Lewis Carroll, *The Hunting of the Snark* is surely, and for good reason, the least well known.

Unlike its famous predecessors, *Alice's Adventures in Wonderland* and *Through the Looking-Glass*, this long nonsense poem in ballad form has no young heroine with whom children can identify. Furthermore, it is without the colorful and violent characters, the metamorphoses, the dreamlike shifts of scene, and, above all, the fierce and sometimes frightening verbal gaiety with which the Alice-books swarm. Even adults, who are, after all, Alice's principal devotees nowadays, and who are fascinated by the continuing relevance of both books to problems in logic, linguistics, and metaphysics, do not find the *Snark* as attractive, although it has its own share of profundities.

Inscrutable in its very simplicity on the level of narrative, more purely nonsensical than *Wonderland* and *Through the Looking-Glass*, the poem resists even as it invites interpretation. What is the nature of the Snark, the fabulous quest object of the nine men—all of whose occupational titles begin with a "b"—and the

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lace-making beaver who appear in these stanzas and set sail together in search of the creature? What is the nature of the Boojum, a sinister variety of Snark, whom one of the crew, a baker by trade, meets up with in the end, only to vanish away suddenly, as his uncle foretold that he would should this unlucky encounter befall him? These are some of the questions that Martin Gardner discusses in his introduction and commentaries to *The Annotated Snark*, which forms the nucleus of the very scholarly and handsome edition that William Kaufmann, Inc., has published of this poem, in cooperation with the Bryn Mawr College Library.

Gardner's remarks are amusing, engrossing, and always well written; and while they are often convincing, they are never imposed with didactic intent. He steers a middle course between reading the poem as a strict allegory, which ignores the fact that Carroll composed in a highly spontaneous way, and reading it, on the other hand, as a hermetic work without reference to any area of meaning beyond the nonmeaning formulated in its own nonsense terms.

"The *Snark*," he argues toward the end of his introduction, "is a poem about being and nonbeing, an existential poem, a

Among the ten seekers of the Snark were the Butcher and the lace-making

poem of existential agony. . . . The Snark is . . . every man's ultimate concern. This is the great search motif of the poem, the quest for an ultimate good. But this motif is submerged in a stronger motif, the dread, the agonizing dread, of ultimate failure. The Boojum is more than death. It is the end of all searching. It is the final, absolute extinction, in Auden's phrase, 'the dreadful Boojum of Nothingness.' "

This interpretation is supported by passages in the Alice books that also deal with vanishing, nothingness, and the possibility that life itself may be only a dream. In *Through the Looking-Glass,* for example, Alice is told by Tweedledee that she is only a figment in the dream of the sleeping Red King, whereupon Tweedledum adds that if the King were to wake, she would "go out—bang!—just like a candle!" It is perhaps no coincidence that "candle-ends" is one of the nicknames for the baker, who vanishes when he encounters the Snark/Boojum.

In the light of our contemporary certainty that *The Hunting of the Snark* is essentially, beneath its humorous surface, a poem of deep pessimism, Carroll's own apparent ignorance of this fact seems remarkable. One wonders what commerce, if any, what complicity, existed between

Beaver. After a precarious start, the two became the greatest of friends.

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the gentle deacon-teacher and the devilish genius that inhabited him. Asked about his intentions, or wondering about them himself, he always—Gardner cites five explanations—pled ignorance while admitting, on one occasion, that the meaning of a work might escape the writer of it. "Words," he wrote, "mean more than we mean to express when we use them: so a whole book ought to mean a great deal more than the writer meant." Gardner believes, no doubt correctly, that Carroll was not being evasive. However, it is possible that he held back from looking too deeply into his poem, for fear of what he might find there—a message of despair that is absolutely opposed to the completely orthodox tenets that he held as a clergyman.

In the present edition of the *Snark*, Gardner's text, first published in 1962 and here updated, appears in a manifold context. It is preceded by a facsimile of Macmillan's first edition of 1876, with Carroll's own preface and nine illustrations by Henry Holiday. These, which are duplicated in Gardner's text, are the subject of a long and painstaking article, "The Designs for the *Snark*," by Charles Mitchell. The illustrations appear yet again in a collection of 44 plates, where they are shown in various stages of development. The book's lengthy bibliography by Selwyn H. Goodacre includes translations of the *Snark*.

If this edition, originally intended to commemorate the first publication of the *Snark*, has come on the scene rather too late for that purpose, *Lewis Carroll: A Celebration* arrives in good time to mark the 150th anniversary of his birth on January 27, 1832. It is a collection of 15 essays by as many experts of various nationalities, including Russian and French, who examine different facets of Carroll's life, personality, work and influence. "The Actress and the Don," by Morton N. Cohen, which discusses Carroll's long and apparently nonromantic friendship with Ellen Terry, suitably opens the collection by giving a revealing psychological portrait of the writer, who strove to reconcile his love for the theater and his affection for the unconventional actress with a need to lead an irreproachable existence.

Among other pieces worthy of note are: "Lewis Carroll the Surrealist," by Jeffrey Stern, which considers "what is Carrollian about surrealism and what is surrealist about Carroll"; Ann McGarrity Buki's "Lewis Carroll in *Finnegans Wake*," which examines his affinities with Joyce as a parodist and inventor of words, and unearths a number of references to him and his work in the novel; and Edward Guiliano's discussion of *The Hunting of the Snark*, entitled "A Time for Humor."

Considering the important role that Carroll gave to the illustration of his work, the book appropriately includes three articles on the subject. Michael Hancher's "*Punch* and *Alice*," Richard Kelly's "If you don't know what a Gryphon is," and Janis Lull's "The Appliances of Art" deal with the relationships between the texts of the Alice books and the drawings by John Tenniel. The collection itself is beautifully illustrated with photographs—many by Carroll himself—and drawings, the larger number of which are by Tenniel.

A negative criticism is this: one would have appreciated a lighter touch in some

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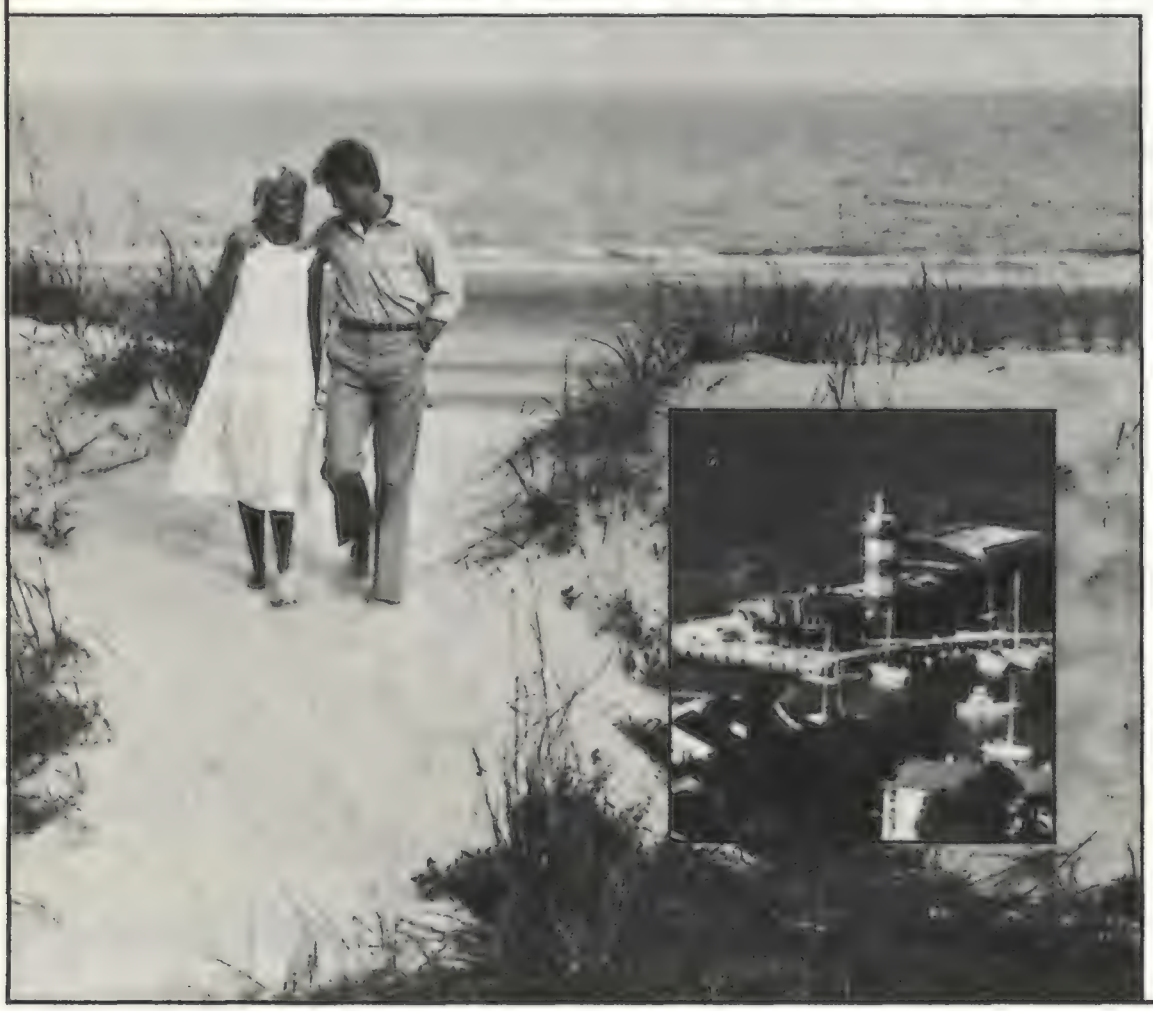

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of these essays, an attempt to meet Carroll in his own spirit. In this respect, Martin Gardner's own style, as practiced in his *Annotated Snark* and his earlier *Annotated Alice*, would have been a good example to follow.

Richard McDougall
Writer; translator of *The Very Rich Hours of Adrienne Monnier*

Bachelorhood: Tales of the Metropolis
Phillip Lopate
Little, Brown, $13.95

This graceful book is a collection of personal essays, with a few poems. It is the latest gift from a talented novelist, poet and teacher whose name should be more familiar to all who care about timelessly good writing.

His intention, "to arrive at something like a portrait in aggregate of the bachelor temperament and a bachelor's life," serves more as a mooring than a structure for many of the essays. In "Willy," for example, he writes of his childhood in Brooklyn where his father was a dyer and his mother a factory worker.

While his narration of lives lived beneath their sensibilities is stark and straightforward, he evokes with great power the untethered atmosphere of rage and frustration he remembers. In "Remembering Lionel Trilling," he pays tender, but tempered, homage to his teacher and friend. "He recognized the lure of the apocalyptic. Yet it still made sense, he insisted, to celebrate in literature the simple daily rituals and the ordinary hearth pleasures and pains. This was a religious attitude—'normal mysticism,' he called it. . . ."

Lopate proved an apt pupil. In celebrating the "simple daily rituals" of bachelorhood, his vision and his voice are uncluttered by heroics. "The prose style of the bachelor narrative," he contends, "is idiosyncratic, digressive, skeptical, observing, unhortatory." He should have added "humorous," for much of his writing is wry and high-spirited.

In an essay on his neighborhood, "Quiche Blight on Columbus Avenue," he writes wincingly—like a good curmudgeonly bachelor—about "the hurricane of chic" affecting his surroundings. "Croissants drive out bagels and rolls. . . . And suddenly the avenue boasts the most highly specialized storefronts, catering to needs you never knew you had: a shop that sells only Western boots, a Japanese *futon*-mattress shop . . . a one-dress boutique. . . ."

"Getting a Cat" is a delightful, self-deprecating investigation of possessing and being possessed. The pitfalls of animal ownership serve as a metaphor for the stages of accommodation humans endure in exchange for companionship: bewilderment, resentment, pride and, finally, the comfort of an uneven peace.

Helping an old woman walk down the street, going through a drawer, riding on a train, all become acts of faith when described so lovingly. And, when the unresolved pain of "ordinary hearth pleasures" surfaces, there is the humor of Mittyesque fantasy. In the poem "Just To Spoil Everything" the author writes of returning, unannounced, to his former love wearing a scarf she had given him:

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of the fond poetic understanding last impressions
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In his introduction, Lopate describes how he "fell under the spell of the personal essay. It is a form that, to me, has charm and suppleness and warmth." It is, also, a form that requires an elegant writing style that renders rich ideas lean. Lopate acquits the form, and himself, admirably. Although he describes bachelorhood as "waiting for something to happen," and bachelors as having "hit and run personalities," his writing is redolent with the spirit and artfulness of survival.

Jill Merrill
Washington writer and critic

Hakluyt's Voyages
Edited by Richard David
Houghton Mifflin, $27.50

Richard Hakluyt apparently compiled his classic anthology in order to refute an aspersion. While serving as chaplain to the English ambassador to France, Hakluyt heard English voyagers maligned for their "sluggish security." Though no explorer himself, Hakluyt was enrapt by geography and determined to prove that the English had as much a taste for adventure as any other nationality. To back up his contention he collected and edited primarily first-hand accounts of British expeditions which were published in 1589 as *The Principall Navigations, Voiages and Discoveries of the English Nation.* An enlarged edition, issued between 1598 and 1600, ran to three volumes and 1.5 million words.

Elizabethan scholar Richard David has reduced this plenty to a single fat volume, handsomely printed, illustrated, and shorn of archaic spelling and punctuation. Hakluyt arranged his material geographically rather than chronologically. David adheres to this ordering and introduces each section ("The Mediterranean and the East," "The Caribbean, Virginia, and Guiana," and so on) with appropriate comments. For instance, in understanding the ambitiousness of 16th-century efforts to sail the northern coast from England to Asia, it is helpful to know that: "The north-east passage does indeed exist, but was finally traversed only in 1878-9 . . . and that voyage involved wintering for six months and more in the Arctic."

One of the highlights of the anthology is the odyssey of seaman Miles Philips. In

1568 an English company under Master John Hawkins sailed into the central American port of San Juan de Ulúa, where it crossed paths with a Spanish fleet. After the ensuing battle many of the Englishmen—Philips among them—were put ashore and faced harrowing escapades in the jungle before their imprisonment by the Spaniards. They were later taken before the local branch of the Inquisition and tried for heresy. (One test demanded of them—a classics professor's warning come true—was whether they could recite the Creed in Latin, "which God knoweth a great number of us could not say otherwise than in the English tongue.") Some were burned, some lashed and committed to serve as galley slaves.

Philips was bound over to a monastery, where he oversaw the construction of a new church. He served his term and soon after leaving the monastery mastered the craft of weaving. At last he attempted to escape the area, was again imprisoned, and then freed himself from his manacles by filing them down with a smuggled tool. By masquerading as a Spaniard, he ended up on a ship bound for "home." Discovered to be English, in danger of being handed over to the primordial Inquisition, Philips jumped ship in Spain and found work as a weaver. He eventually made his way to England, where he arrived after an absence of 16 years. And he was lucky at that: it took one of his cohorts 23 years to get home.

Though the accounts chosen for this volume span about 50 years and range from Newfoundland to Burma, certain perils recur with numbing regularity. There are many narratives in which one or more of the following occurs: the foundering of a ship; attacks on and capture of the crew by myriad hostile peoples; devastation of the crew by starvation, dehydration and disease. Regarding the toll of disease, there is a disheartening comment by one Thomas Stevens about a trip round the Cape of Good Hope to the East Indies: "Though we had more than one hundred and fifty sick, there died not past seven and twenty; which loss they [the veterans on board] esteemed not much in respect of other times." (Two centuries passed before the great English voyager, Captain James Cook, could claim to have "discovered the possibility of preserving health among a numerous ship's company.") Reading accounts like Stevens' one has little doubt that Hakluyt proved

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his point. Far from sluggish, these Englishmen seem intrepid to the point of mania.
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Shepherds' Compleat Early Nineteenth Century Woodworker
By Stephen A. and Victoria L. Shepherd
Green River Forge, Ltd., Roosevelt, Utah, $27.50

"The one education which amounts to anything is learning how to do something well whether it is to make a bookcase or write a book. If I could get a carpenter to make me some good bookcases, I would have as much respect for him as I have for the people whose books I want to put on them. Making something well is the principal end of education." Those are the words of American frontier novelist Willa Cather, quoted in 1925. Now, some 57 years later, the Shepherds—without reference to Miss Cather but doubtless in touch with her spirit—have given us what may well be the ultimate tome on working with wood the old-fashioned way, sans power tools, sans high-tech. They sing of felling trees and selecting woods, of making and using the proper tools, and reconsidering the time-honored "receipts" for glues and varnishes. (As the effusive preface by J. Thomas Kramer notes: "Having a glue that is stronger than the wood itself has been sold to us as an advantage for years. Few but he [Shepherd] have considered that which our ancestors had reasoned out. If the glue is stronger than the wood itself, then the *wood* will break, making repairs difficult and costly.")

The book starts at the very beginning. A good woodcrafter must know his trees, their growing conditions, their grains. For example, trees growing out of a hillside, at an angle, will show compression on the uphill side and tension on the downhill side. To modern ears, such quibbles may seem mere pedantries. But they were important points to the woodwrights of the past. Adds Stephen Shepherd (the narrator of the text): "When I cut down trees, I select the proper wood for the project I have in mind. For this reason, it is difficult for me to imagine what to do with a stack of boards in a lumberyard. At best I can only determine which end of the board points up, which side was toward the center of the tree and which side was toward the bark (the best side to put toward the weather)."

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The Shepherds have filled their pages not only with ageless techniques but also with associated folklore. For example, apple trees, shot with a scattergun to improve the yield of fruit, formed burls that were valued as raw material for lovely wooden bowls. Locust wood was ideal for fence posts, provided they were stuck in Mother Earth upside down to frustrate the wood's desire to take up water—a technique, I hasten to point out, that may have been known to the ancient Minoans. Cedar was renowned for its ability to expand and contract with atmospheric changes. When the cedars of the New Jersey swamps—virtually clear-cut to provide shingles for early America—began to disappear, the woodsmen of the area turned to older logs submerged under the waters. These were brought up, dried out and served perfectly for new shingles.

Early settlers also learned to use an old hand ax or hatchet to cut through the bark before felling trees for their log cabins. Why? Because it was known that the rough bark could harbor wind-borne sand and pebbles, which could quickly reduce even the finest ax blade to a state of dull helplessness. These people also knew, when felling trees, to beware the odd widowmaker, whose colorful origin is as follows: whenever a tree is cut down, some of its branches are broken off and retained by nearby trees. Sometimes, these drop right away; often they don't. But they are sure to fall when the nearby tree itself is being sawed. And the laws of physics demand that they fall heavy-end first. Widowmaker, indeed.

And so it goes with the Shepherds, with many such pleasantries about the twibil (a hand tool related to the adze-hatchet) and the froe (which, when moved "to and froe," helped to split shingles out of logs). According to Shepherd, the old saying, "dull as a froe," is apparently an offspring of this tool, which split wood fibers apart, yet did not cut them. I was entranced by the bruzz (a tool for cleaning and squaring up mortices), the scarf joint (used for joining ship keels), and the Dutch-hand (a boon to the cooper wrestling with the unruly staves of each new barrel). Despite a somewhat roughly hewn first printing (to be corrected) the book is great fun, attuned to today's rage for reconstruction and restoration.

Michael Olmert
Annapolis-based free-lance writer

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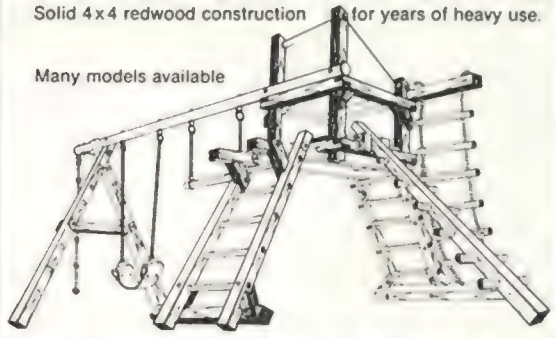

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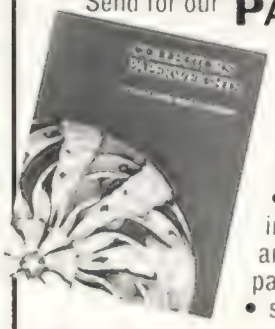

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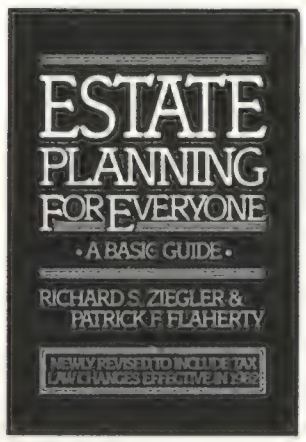

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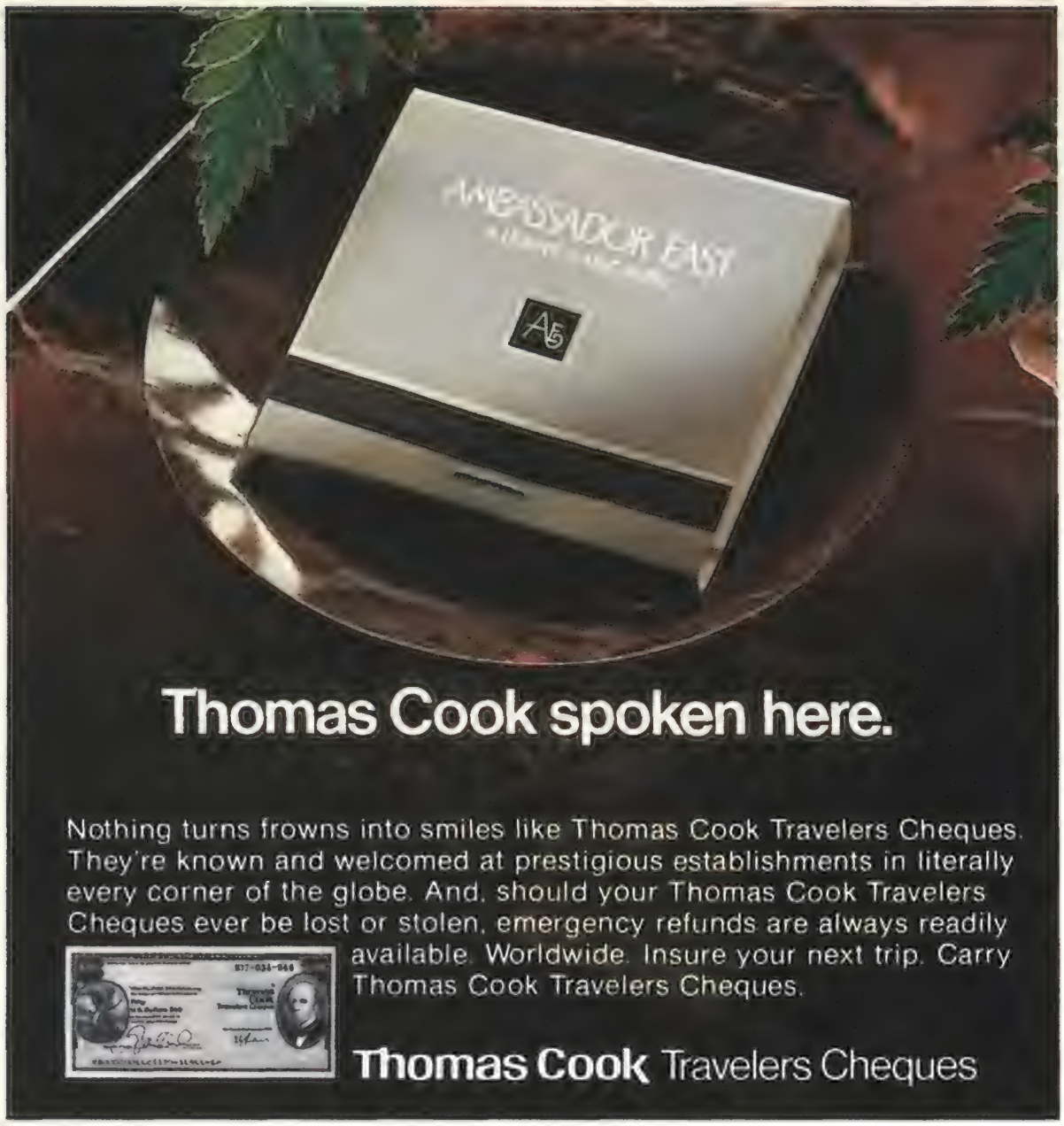
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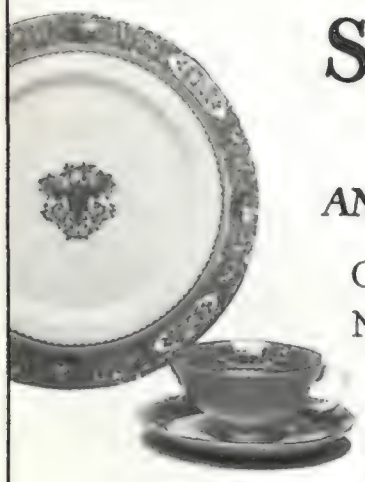

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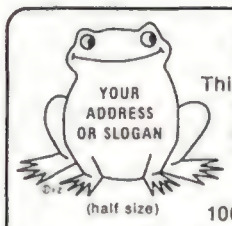

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Additional reading

Points of origin (p. 38)

"Footnotes More Pedestrian than Sublime" by Earl R. Anderson, *Eighteenth-century Studies*, Vol. 14, Fall 1980

Athletics of the Ancient World by E. Norman Gardiner, Ares Publishers (Chicago), 1980

The Overburian Characters by Sir Thomas Overbury, Basil Blackwell (Oxford), 1936

The Silk Road (p. 46)

The Travels of Marco Polo, edited by Manuel Komroff, Horace Liveright (New York), 1930

In the Footsteps of Marco Polo by Harry Rutstein and Joann Kroll, Viking, 1980

Foreign Devils on the Silk Road by Peter Hopkirk, John Murray (London), 1980

The Silk Road by Jan Myrdal and Gun Kessle (translated by Ann Henning), Pantheon, 1979

Stones of Silence by George B. Schaller, Viking, 1980

Livestock-guarding dogs (p. 64)

Livestock Guarding Dogs by Raymond Coppinger and Lorna Coppinger, Livestock Dog Project (Chestnut Hill Road, RFD, Montague, Massachusetts 01351), 1978

"Is Predator Control Going to the Dogs?" by Jeffrey S. Green and Roger A. Woodruff, *Rangelands*, October 1980

"So Firm a Friendship" by Lorna Coppinger and Raymond Coppinger, *Natural History*, March 1980

Genetics and the Social Behavior of the Dog by John Paul Scott and John L. Fuller, University of Chicago Press, 1965

Napoleon (p. 76)

Assassination at St. Helena by Sten Forshufvud and Ben Weider, Mitchell Press (Vancouver, Canada), 1978

Who Killed Napoleon? by Sten Forshufvud, Hutchinson (London), 1962

The Last Years of Napoleon: His Captivity on St. Helena by Ralph Korngold, Harcourt Brace, 1959

National Center for Atmospheric Research (p. 88)

The Genesis Strategy: Climate and Global Survival by Stephen H. Schneider with Lynne E. Mesirow, Plenum (New York), 1976

Climate Change and Society: Consequences of Increasing Atmospheric Carbon Dioxide by William W. Kellogg and Robert Schware, Westview Press (Boulder), 1981

A New Sun: The Solar Results from Skylab by John A. Eddy, National Aeronautics and Space Administration, 1979

DARE (p. 100)

Words and Ways of American English by Thomas Pyles, Random House, 1952

The American Language by H. L. Mencken, fourth edition abridged by Raven I. McDavid jr., Knopf, 1963

American Speech, a quarterly publication of the American Dialect Society, University of Alabama Press

Folger Library (p. 118)

The Widening Circle: The Story of the Folger Shakespeare Library and Its Collections by Betty Ann Kane, Folger Shakespeare Library, 1976

"The Folger Shakespeare Library" by Selwa Roosevelt, *Town & Country*, October 1979

Shakespeare: The Globe and the World by S. Schoenbaum (the book of the traveling Folger exhibition), Oxford University Press, 1979

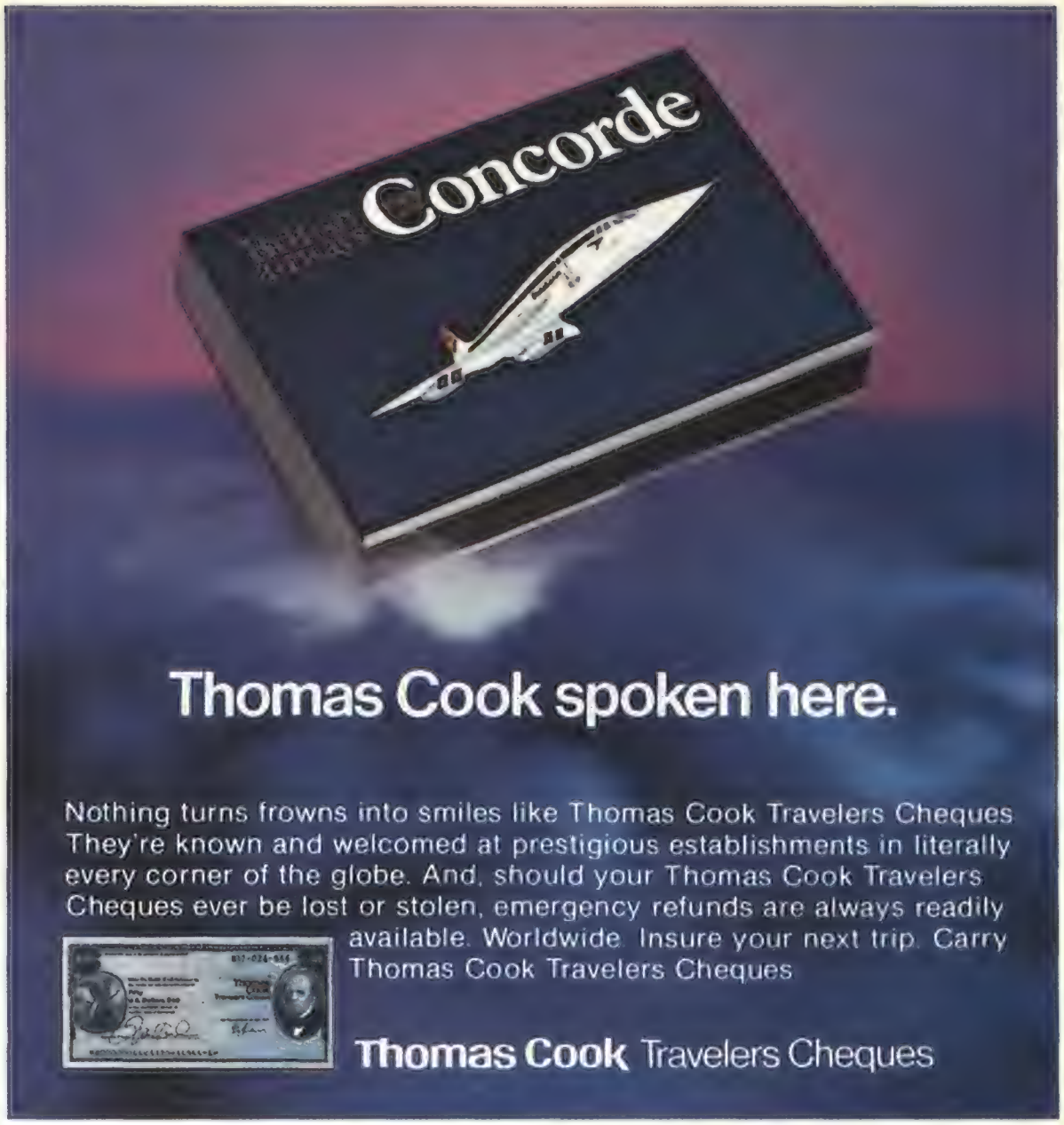
Sir Stamford Raffles (p. 130)

Raffles of the Eastern Isles by C. E. Wurtzburg, Hodder and Stoughton (London), 1954

The Life of Sir Stamford Raffles by Demetrius Charles Boulger, Horace Marshall & Son (London), 1899

Memoir of the Life and Public Services of Sir Thomas Stamford Raffles by Sophia Raffles, John Murray (London), 1830

Raffles by R. Coupland, Oxford University Press, 1926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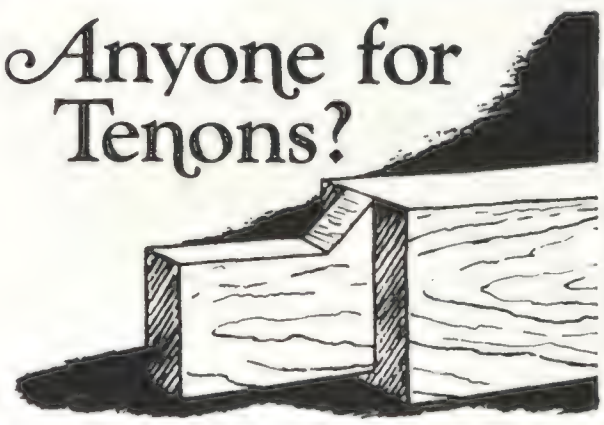

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Smithsonian highlights

The circus comes to the Mall in April, with the Smithsonian's annual *Spring Celebration*. Sponsored by the Division of Performing Arts and the Museum of American History, *Celebration* focuses on circus activities and crafts, April 23-25 from noon to 5 P.M. Outside on the Mall side of the museum will be an authentic Wild West show and a "little" big top, with trained dogs and a dressage riding act. And inside will be a sideshow with a sword swallower, fire eater and other attractions. Along Clown Alley will be crafts demonstrations so you can learn how to make clown props and your very own floppy shoes.

Also in April the Air and Space Museum will begin summer hours, remaining open until 9 P.M. Other museums will be open 10 A.M.-5:30 P.M. as usual.

Special events

Hirshhorn Museum & Sculpture Garden
De Stijl, 1917-1931: Visions of Utopia (April 20-June 27) Major show of work from this influential Dutch movement.
Red Grooms from the Museum's Collection (through May 2) Works inspired by New York City and Hollywood.

National Museum of American History
Spring Celebration (April 23-25, noon to 5 P.M.) Circus acts and crafts.
G. Washington: A Figure Upon the Stage (through January 11, 1983).

National Museum of Natural History
Contemporary American Indian Art (March 13 through summer)—Some 100 artists.
The Tarahumara (April 17-June 13) Works by George Carlson (pp. 168-69).
The Vanishing Race and Other Illusions: Photography by Edward Curtis, 1900-1930 (through April 15) A critical look.

Brenda Kennedy Grummer's *Flowers in the Sun* is in NMNH Indian art show.

National Air and Space Museum
Celestial Fires: Stars as Suns (April 21, 7:30 P.M.) Lecture.
Telling Time by the Moon (April 3, 9 A.M.) Monthly sky lecture.
Jacqueline Cochran: World Record Holder (through August 1983).
U.S. Army Helicopter Championship (new exhibit) Honors team that won contest in Poland in August 1981.

Cooper-Hewitt Museum (New York)
Hawai'i (through May 9) Hawaiian culture, past and present.
English Majolica (through June 13) Colorful ceramic ware of the 19th century.

Renwick Gallery
Celebration: A World of Art and Ritual (through June 1983) Major exhibition of some 600 objects from many cultures.

National Portrait Gallery
American Portraiture in the Grand Manner (through June 6) Works from 18th to early 20th centuries.
The 18th-Century Image of George Washington (closes April 27).

Regional events

The Regional Events Program will visit Boise on April 21-25, and Spokane on April 21-26—featuring such subjects as pandas, sports heroes and archaeology. Area associates should have received invitations by this time. For information, write: Regional Events, 1208 A&I, Smithsonian, Washington, D.C. 20560.

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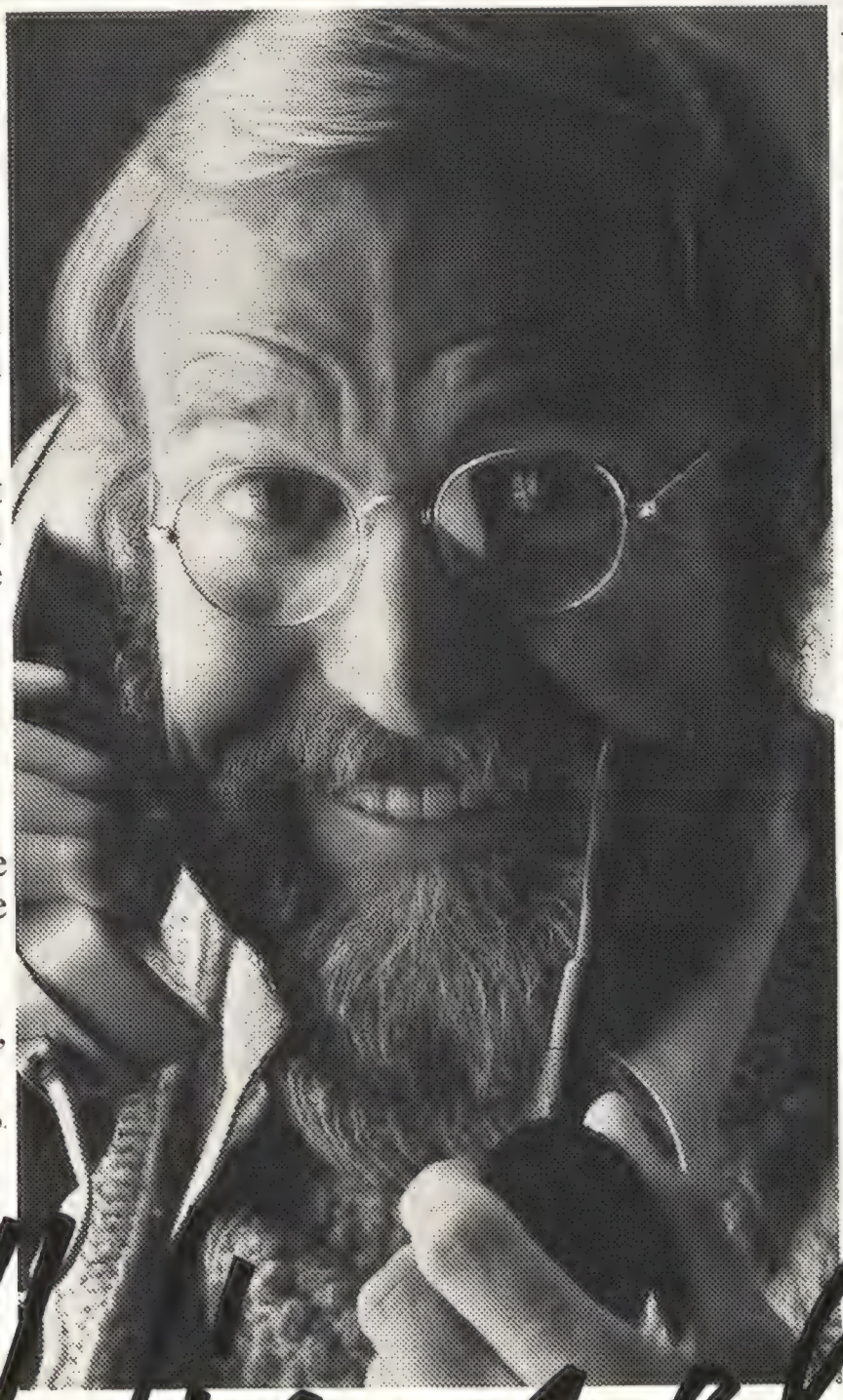

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Smithsonian events

For price information and tickets to Resident Associates events, call 357-3030:

Simon's Choice: Badlands (April 15, 8 P.M.) Critic John Simon and 1974 film.

The World of Medieval Europe (April 10) All-day seminar.

Four and One-Half Billion Years of Rocks (April 24) All-day seminar.

Space and Place: 20th-Century Theater Architecture (April 26, 8 P.M.) Lecture.

Ancient Image of Man in pre-Columbian Art (April 12, 8 P.M.) Lecture.

Remembering the Titanic (April 20, 8 P.M) Lecture.

For information and tickets to Division of Performing Arts events, call 357-1500:

Honi Coles and The Jazz Tap Ensemble (April 3-5) Traditional and new tap.

Sonny Rollins (April 16) Master of jazz tenor saxophone.

Emerson String Quartet and Friends (April 30-May 2) Music of Beethoven.

Smithsonian Institution Traveling Exhibition Service

SITES circulates exhibitions to hundreds of cities outside Washington. To sponsor a show in your community, write to Eileen Harakal, SITES, Smithsonian Institution, Washington, D.C. 20560. Here are some April exhibits:

Bethlehem, Pennsylvania (April 10-May 9) *Transformed Houses,* Lehigh University Art Galleries.

Pittsburgh (April 10-June 6) *Mary Cassatt: Graphic Art,* Carnegie Institute.

Dallas (April 17-May 16) *Good As Gold: Alternative Materials in American Jewelry,* Dallas Historical Society.

Salt Lake City (April 17-May 16) *America's Space Truck: The Space Shuttle,* Hansen Planetarium of Salt Lake County.

Charleston, West Virginia (April 7-May 16) *Pressed On Paper: Fish Rubbings and Nature Prints,* Sunrise Foundation.

Membership benefits

A pre-visit packet, filled with information for Associates coming to Washington, is free: send postcard request or phone Associates Reception Center, Smithsonian Institution, Washington, D.C. 20560 (202-357-2700 or, for hearing impaired, TTD 202-357-1729). Allow two weeks for receipt.

The welcome extended to visiting Associates at the Associates Reception Desk in the castle 10 A.M. to 4 P.M. daily includes details about benefits: a slide/lecture orientation to the 13 Smithsonian museums; dining in the members' restaurant; relaxing in the Associates Lounge; discounts in most Smithsonian shops.

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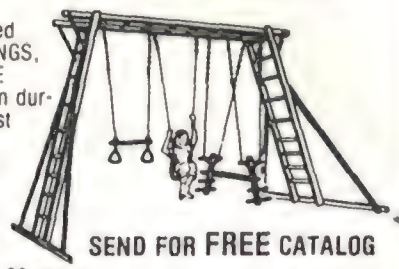

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Tarahumaras live in bronze

The Hunter, 12 inches high, pauses for a drink in a realm where streams and pools are far and few.

Day of Guadalupe, 25-inch bronze, was inspired by Christmas ceremony; Carlson knew men portrayed.

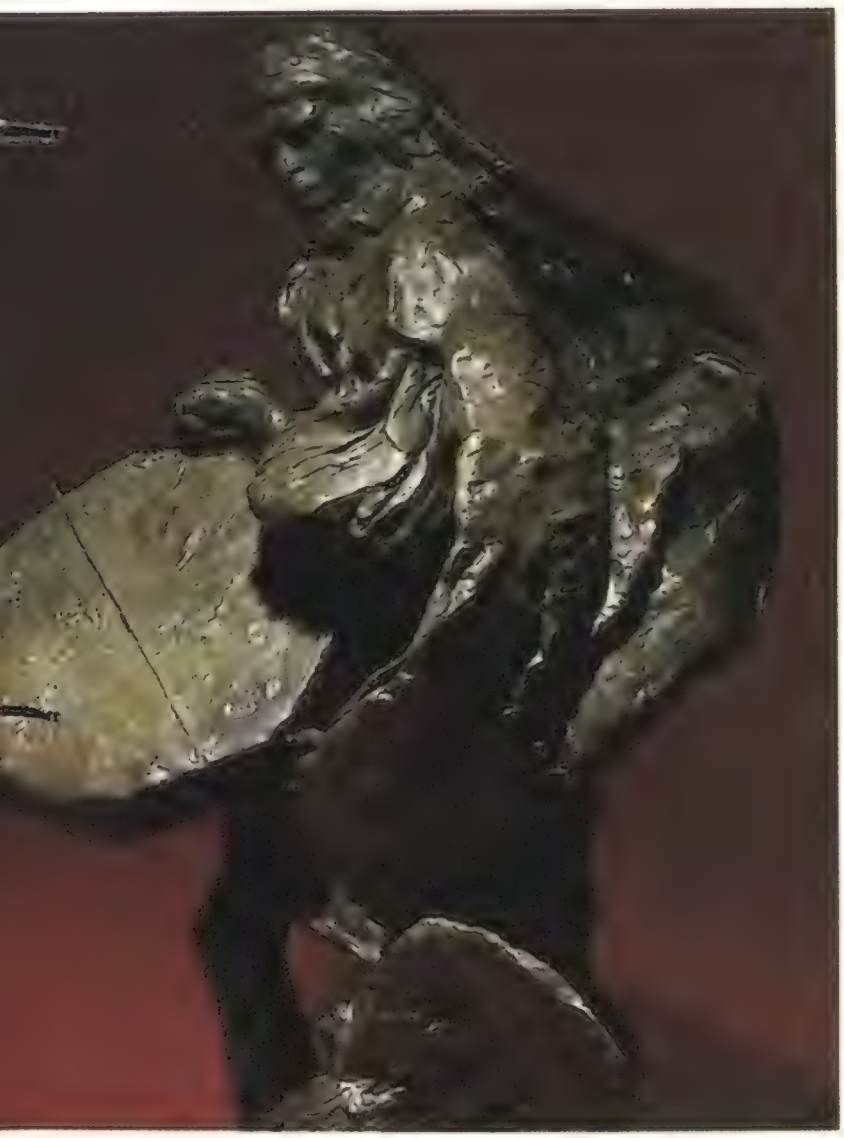
Some people say that George Carlson is a Western artist, a sculptor of Indian art, but he prefers to think of himself as a sculptor of humanity. Indians happen to be his subjects, probably because the ones he favors, the Tarahumaras, represent to him life in its purest form. His works exhibited at the Natural History Museum April 17 to June 13—23 bronzes and some 25 pastels—are all based on what he calls his "Tarahumara experience."

This experience took place from 1973 to 1975. Carlson spent about eight months with the Tarahumaras in remote and isolated parts of Mexico. Camped alongside a river, drawing his water into a five-gallon plastic container as he watched Indian women using the earthen *olla,* Carlson was able "to see what their daily life was all about." He witnessed their beautiful Christmas and Easter ceremonies, their dances and rituals and got "to see what happens when they bathe their kids in the nearby streams." Eventually many consented to pose for his on-site paintings and wax sculptures. He got to know his models, "all types and ages," and paid them with food, fabric, pocketknives, safety pins and other articles stored in his three-quarter-ton truck.

The 41-year-old Colorado artist says he relied on memory—and a camera—for much of his Tarahumara work: "For instance in *Fiddler* [opposite], I couldn't ask him to remain in that position. With *Approaching Death* [opposite], the woman was so attentive to her child at that moment . . . I didn't want to intimidate her. That piece I did from memory."

Carlson planned his trips aware that a proposed road would open the area to increasing outside influences. "I've been back once since the road," he says, "and as an observer of life, I'm glad I got to record some of the traditional richness of these people before things changed."
Carol Simons

Approaching Death: Artist didn't want to give the child "a particular identity."



The "one voice" of the canyon and the people is expressed in *I'm the Drum.*

Mobility inspired *To the Ceremony;* the people "drift across the landscape."

Carlson liked the legs of model who posed for *The Fiddler,* 26-inch bronze.

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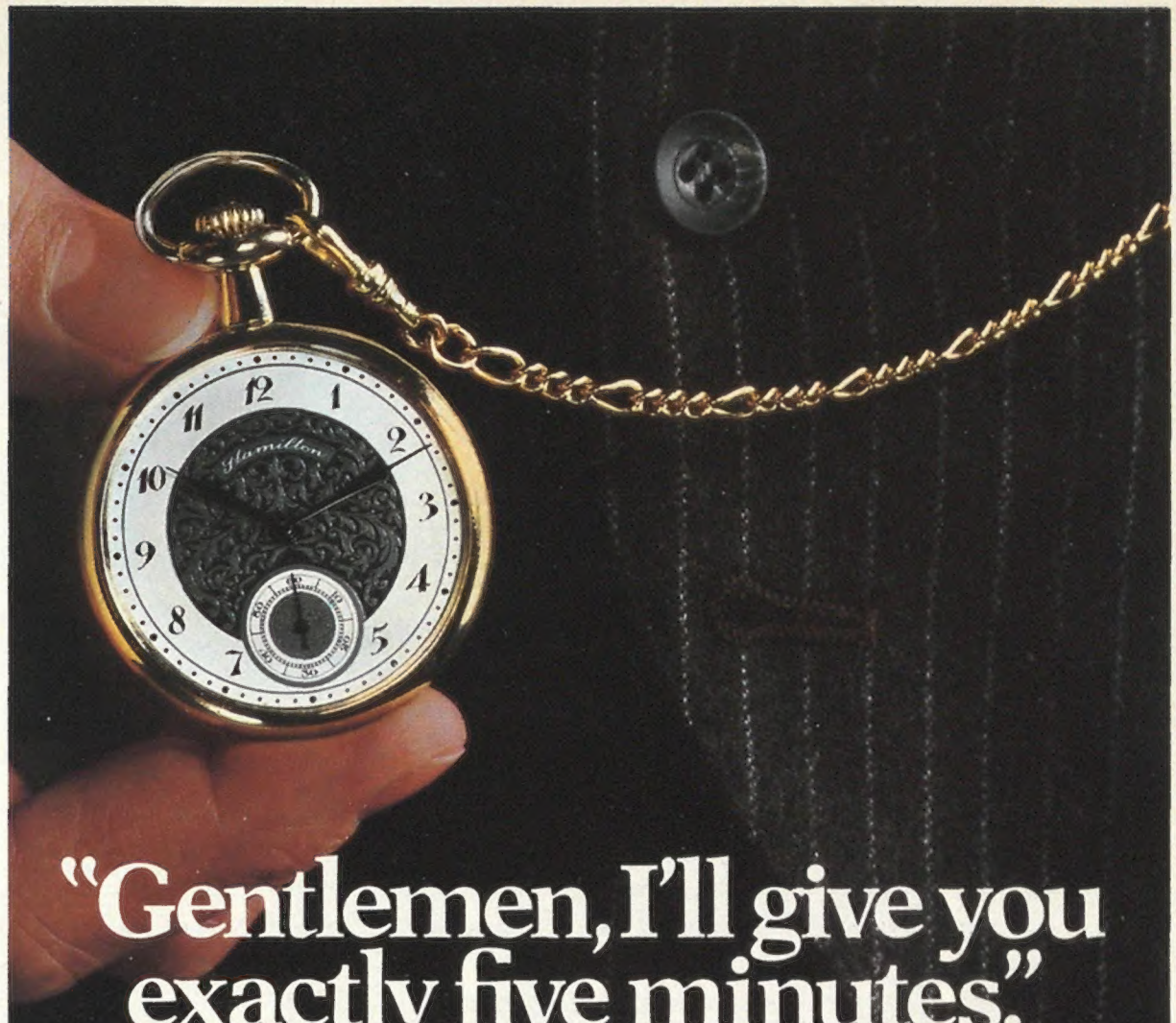

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By Richard L. Williams

Food for thought, but too costly for most taste buds

You can't blame them. Once in a while newspaper food editors, getting tired of suggesting new things to do with chicken parts or hamburger meat, let themselves go and write in a let-them-eat-cake vein about truffles ("the black diamonds of gastronomy"), or caviar ("platinum in a can") or saffron ("the spice with the price of gold"). As a former food editor, I'll now do likewise.

If it weren't for food writers, nobody but eyewitnesses would know, for example, that truffle-sniffing pigs-in-training are actually *carried* to the truffle regions of northern Italy, to save their strength for the really important work. (Miss Piggy never had it that good.)

These three (truffles, caviar, saffron) are the world's most expensive foodstuffs—a pound of each would set you back more than $2,000—but they're fun to read about in the if-I-had-a-million sense. Also they're interesting, if not exactly affordable.

The most outrageously sybaritic meal I ever ate started out with one of the three: Beluga caviar slathered on Idaho baked potatoes and served with Stolichnaya vodka poured from a bottle encased in ice. That was at an alfresco lunch on the terrace of Le Beau Rivage at Ouchy, Switzerland. (As to what Idaho potatoes were doing in Switzerland: the innkeeper had bought a bag on a trip to New York and planted them several potato generations back. They had thrived.)

The caviar had come pretty far, too, originating as the roe of some sturgeon probably caught in the Caspian Sea, in the USSR or Iran. Aside from the fact that you (whoever "you" are) can pay up to $800 a pound for the stuff nowadays, its fishy odor has a whiff of foreign intrigue about it. Soviet higher-ups reportedly have been involved in highly profitable caviar capers, and cans of caviar have been known to mask transatlantic heroin shipments.

Anyway, the caviar at Le Beau Rivage was most yummy, its deliciousness reduced not a bit by the fact that a waiter passing nearby ogled, slipped, sprawled and spilled his trayful of somebody else's lunch on the flagstones, fortunately not on my wife and me.

Among the high-priced three, saffron takes the cake as being the costliest, one brand going for $2,000 a pound. (Since a little goes a long way, unless one is superloaded one buys it by the pinch, not by the pound.) Cesar Perez, who runs El Tio Pepe restaurant in Washington, once gave me a free pinch. While historians like to tell how the precious aromatic spice was scattered in front of Nero on his approach to Rome, more recently it has yellowed and flavored every golden grain of rice in a Spanish paella.

The reason it is so expensive is that somebody has to pick the crocus blossoms from which it comes, one flower at a time, then separate out the threads, three to a blossom, and dry them for the market. Also, it takes more than 75,000 blossoms to make a pound of saffron, whether the picking is done in Kashmir or in Spain.

Compared with saffron, truffles are dirt cheap, costing only a few hundred dollars a pound, and compared with caviar are far more romantic. They are fungi and grow mostly to golf-ball size underground in the root systems of oak, poplar and other trees. The most notable ones come from south-central France (black ones from the Périgord region, where scientists are trying to grow them artificially) and northern Italy (white ones from the Piedmont).

To sniff them out farmers use trained dogs—mongrels preferred, for some reason—or, less often in recent years, pigs. To conserve their energy young sows are often carried to a likely truffle site, and to conserve the truffles, a sow is tossed a hunk of apple or potato for reward when it has found one. No one has asked the pigs, who love truffles, what they think of this treatment.

Not long ago George Brunani, a restaurant-owner friend of mine in Washington, sent his wife over to Italy to pick up a few truffles. In Milan (where the best ones are sent, to be displayed in show windows before being auctioned off for as much as $2,000 apiece) she bought two bags full for only $400 a kilo. Back in Washington, she suddenly was dismayed to find that the plane mistakenly had carried the truffles on to Dayton, Ohio. Instead of snitching to local restaurant people about the truffles that had gone astray, and thus making a fast buck, the ever-honest airline people carefully refrigerated them overnight and sent them back to the Brunanis and the restaurant, Tartufo (Italian for truffle), on the next flight.

Some time later I had some of the truffle shavings from that shipment, strewn over a plate of fettucine, and can report that they, despite their typically somewhat sour-rancid penetrating odor, went down fine. Truffles are an easily acquired taste, though who can afford to acquire it? But, delectable as all the foregoing may be, please pass the Tums.

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